The **future** of **interactive** entertainment

UK edition **February** 1995 **£**three ¥2100 $ten

EDGE

Sony ▪ Sega ▪ Nintendo ▪ 3DO ▪ PC ▪ Amiga ▪ Atari ▪ SNK ▪ Arcade ▪ NEC ▪ CD-i

PlayStation enters the solid state: Edge plugs in

Voted **Magazine of the year**



Industry awards

A full year since Sony's first announcement, the PlayStation has finally arrived. Edge reports from the Japanese launch, takes a screwdriver to the hardware and roadtests *Ridge Racer* – see review, page 68



Issue **seventeen** **17**




EDGE



The Sony PlayStation: hardware launch of the decade

And so the waiting ends. Sony's very first dedicated games machine has arrived, and by God has it been worth the wait.

Never before has a hardware launch been so... *right*. Everything from the casing to the sexy black CDs to the brilliantly designed memory cards to the sheer power of the beast. Sony hasn't overlooked a single thing – it has delivered, just like **Edge** always said it would.

And in so doing, Sony has squeezed everything from the CD format. We're now in a position where a near-perfect conversion of a state-of-the-art coin-op is thrown into RAM in one go, taking around ten seconds. But then you never really notice, because you're too busy trying to rack up that elusive 'Perfect' on the *Galaxians* loading game – a wonderful juxtaposition of the old and the new. And **Edge** will be most disappointed if the entire game isn't in there somewhere...

Similarly, Namco has worked wonders in the paltry few months it has had to convert a massively complex arcade game to a brand-new and untested console. Masaya Nakamura, the chairman of Namco, now has the perfect platform with which to get back at his old adversaries Hiroshi Yamauchi and Nintendo. (Who, it must be remembered, unveiled the laughable Virtual Boy just two weeks before Sony's machine went on sale.)

Even Sega's Saturn, which so impressed everyone when it arrived just a few weeks ago, now faces the most daunting of battles with a limited supply of worthy software.

The PlayStation – and Sony – have arrived. And everybody else had just better watch out.






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Annual subscription rate **£36, post free**
Overseas distribution: Future Publishing 225 442244

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Colour reproduction

Colourworks Repro, Bristol
Phoenix Repro, Bristol

Print

Cradley Print,
Warley, West Midlands
Edge is printed on Royal Press 90 gsm

Production of Edge

Hardware: Power Macintosh, Quadra, PowerBook, IIsi and Classic by Apple
Software: *XPress, Photoshop, Typestry, Freehand* and *Nisus*
Typography: (Adobe®)
ITC Franklin Gothic/**Heavy**
Bell Gothic Light/**Black**
Gill Sans/**Bold**
Fifth colours: Pan® 8003c and 8182c

Cover

Cover Image: Sony PlayStation
Photography: Pete Canning





Illustration: Kath McCloskie



Photography: Pete Canning

6 News





Queues for Saturns (top left) PlayStation launch (left) and Saturn

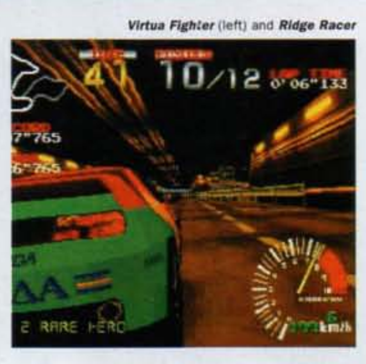
26 Prescreen




Toshinden (left) and ***Motor Toon Grand Prix***

Testscreen 65

Virtua Fighter (left) and ***Ridge Racer***



Photography: Jude Edginton

106 ATD



The latest **news** from the world of interactive entertainment

Sega and **Sony** sell the dream

Edge witnesses the biggest videogames events since the launch of the SFC

The PlayStation's system ROM includes a CD player (centre) and an excellent memory management system (above) – each card has its own 15 data pigeonholes

The PlayStation's styling is pure Sony. The unit is relatively small, measuring just 270x180x60mm, and the joypad is bordering on the minute – trying to hold it with fingers positioned on all four top buttons (top left) isn't easy



December 3 in Ikebukuro, Tokyo. Punters queue up for the PlayStation on the off chance of picking up unbooked machines. Most were successful





Playable PlayStations with *Ridge Racer* (top right) appeared in Akihabara (top) a week before the launch



Who is it?

Often described as 'the father of the computer', this 19th-century mathematician and inventor spent most of his life trying to build a calculating machine. He failed, but his place as one of the pioneers of computing is assured







***Ultimate Parodius Deluxe* (top), *A.IV Evolution* (middle), and *Ridge Racer* (above)**

Onsale now

At the time of writing, the following PlayStation games were available.

- ***Ridge Racer* (¥5800 – £35**
- ***Ultimate Parodius Deluxe* (¥5800)**
- ***Crime Crackers* (¥5800)**
- ***A.IV* (¥7800), *A.IV Evolution* (¥10,800)**
- ***Powerful Family* (¥6950)**
- ***Mahjong Station Mazin* (¥6000)**
- ***Tama* (¥5800)**
- ***Smiley Policewoman Pachinko Hunter* (¥6800)**
- ***Twinbee Puzzle* (¥5800)**
- ***Motor Toon GP* (¥5400)**
- ***King's Field* (¥6300)**

A year after Sony first revealed the existence of the PlayStation project, the company has finally delivered its most important consumer electronics product of the decade.

The December 3 ship-out of 100,000 PlayStations to stores across Japan was highly successful but surprisingly, was not met with the same euphoria-charged reception that the Saturn received on its November 22 roll-out (see pages 8–9).

However, the queuing phenomenon associated with big Japanese hardware and software launches was in evidence for the Sony machine. On the morning of December 3, **Edge** checked out Bic Camera in Ikebukuro, a shop which, two years ago, had 12,000 people waiting outside for the SFC cart *Dragon Quest V*. Sure enough, by 9am a small group of cash-padded gamers had assembled to snap up those machines that hadn't already been booked. An orderly queue was managed by shop officials, who gave out numbers to people as they arrived. **Edge** joined the party and after a short while handed over the required amount of yen.

On the day, **Edge** was able to buy a PlayStation for just ¥37,000 (£245), saving ¥2800 (£18) on the list price – some games and electronics shops were offering discounts of up to 7%. The machine itself comes packaged without a game, and – like the Super Famicom – a single joypad with an infuriatingly short lead. Thirdparty pads from Namco (the Negcon, which should be available now), Sunsoft and Ascii (March and February, respectively) should rectify the problem. Other accessories available (or due soon) include memory cards, a link-up cable, a mouse, and an RGB SCART cable.

Now that **Edge** has had time to get to grips with the finished system, it's no exaggeration to say that Sony's first games console is a tremendous piece of kit. Even switching on the system is an experience: a sonorous tone booms out as the Sony Computer Entertainment logo fades in onscreen. If a game CD isn't in the tray, the PlayStation's internal system ROM operates a music CD player and a memory file system. This latter feature is, quite simply, the most intelligent game-save facility ever devised. Sony's petite memory cards are sold separately (¥2,000/£13), each card containing 128K of SRAM. The memory system allows files to be edited and even transferred from one card to another, a unique Sony solution to the problem that every other CD system has been plagued with.

In almost every respect, the PlayStation has surpassed people's expectations. As a performance yardstick, *Ridge Racer* is outstanding: the loading system is revolutionary, the graphics are incredible, and the conversion packs plenty of extra features to extend its longevity.

Sony has delivered an astonishing piece of hardware, and a range of spectacular titles is on the way. Only those UK gamers with exceptional

Continued next page



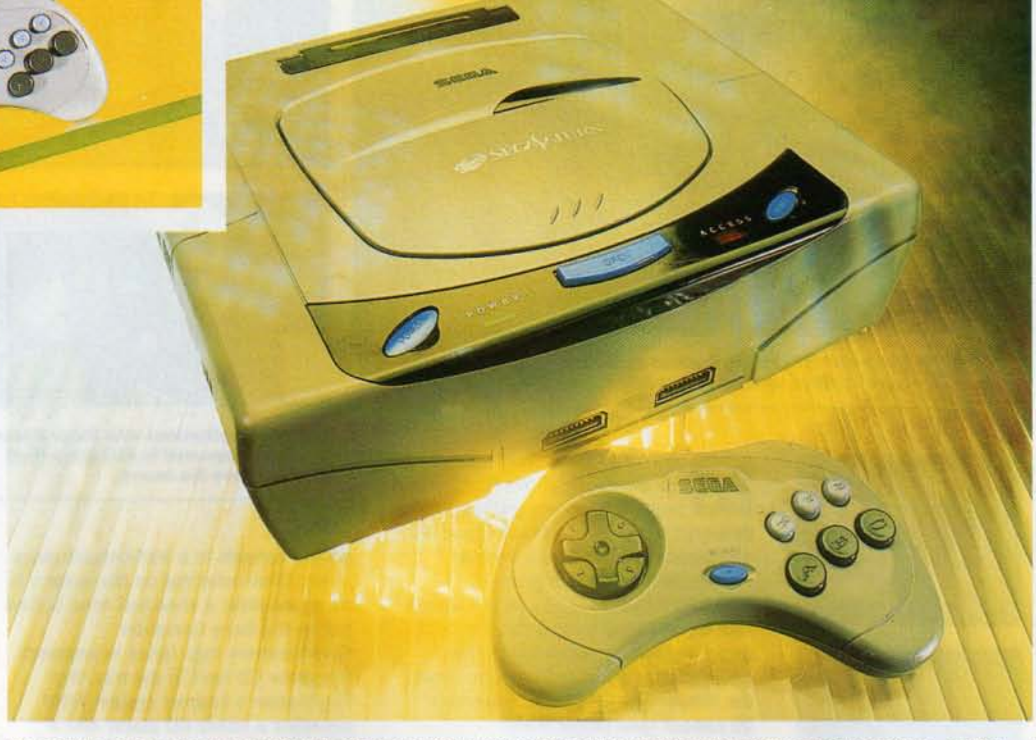


A typical Japanese games shop in Akihabara (left). Shops like these announced the availability of both machines several weeks ago (right)



it is...

Charles Babbage (1792–1871). After building a simple adding machine in 1822, he started work in 1833 on his ambitious 'Difference Engine'. Although never finished, it is regarded as the forerunner of the modern digital computer



The Saturn has an all-over matt-grey finish and a rather conventional joypad (top left). Unlike the PlayStation, all the Saturn's settings are saved in SRAM using its internal battery. SRAM carts can be plugged into the cartridge slot









From top: Sega's mouse, the joypad and *Virtua Fighter*. Buyers of an import Saturn or PlayStation will need a 220/110V step-down transformer (above)

willpower will be able to hold out until the official launch next September...

While Sony was still manufacturing PlayStations, Sega's Saturn arrived to a rapturous reception in Japan on November 22. 200,000 units sold out instantly on day one, but according to a Sega source, the company held back 300,000 units so it would have stocks available when the PlayStation appeared.

On the day of the launch, **Edge** was in Akihabara, probably the world's most awesome electronics haven, with every shop stuffed to the brim with CD Walkmans, laptop computers, LaserDisc players, and, of course, videogames hardware. Most outlets had been taking bookings for the Saturn in the month prior to the launch, but **Edge**'s attempt to book one two weeks earlier had proved impossible.

At 8am in the morning, **Edge** arrived at one of the most hardcore games stores in Akihabara – the Laox Computer Game Centre – where a couple of thousand unbooked machines were available and joined the tail of a queue consisting of around 300 expectant gamefreaks. By 9am that number had doubled. Being relegated to the lower reaches with ticket number 306, **Edge** endured two and a half hours before a Saturn was in the bag. If it hadn't been for the shop assistant dressed as one of Sega's Coneheads (from the marketing campaign depicting Sega's console being hammered out by inhabitants of Saturn with elongated heads) the wait would have been unbearable. In the event, the machine cost ¥44,800 (£290), with *Virtua Fighter* the only worthwhile game available.

So the hype had worked. Saturn was a huge success, and Japanese gamers were beside themselves as they walked away with their prized possession and a near-perfect conversion of the *Virtua Fighter* coin-op. →





The JVC V-Saturn was available at the same time as the Sega machine, but actually finding one to buy was difficult. Edge was given a demo at JVC's offices in Shibuya, Tokyo. All Saturns have an MPEG port (right)







November 22, Akihabara, Tokyo: 600 hundred eager gamers wait in line to hand over ¥44,800. Coneheads maintained the peace (left)



The Laox Computer Game Centre where Edge bought its Saturn. Five games were available, but most people got the machine with *VF* and an extra pad

→ And the launch frenzy was (almost) worth it: the Saturn is undeniably an excellent machine. For ¥44,800 you get the hardware itself and one joypad (with a longer lead than the PlayStation's), although pre-booked machines in other shops were often accompanied by a free extra pad. Like Sony's system, the Saturn is supplied with only composite cabling. However, rather cheekily, a customised AV port means that Sega's cables are the only ones that will work. An extra ¥2000 (£13) will get you the far superior S-Video hook-up, and an RGB SCART lead is due shortly.

The joypads, which are attached by a 7ft chord to a snug port on the unit's front, are perhaps the Saturn's most conventional feature. First impressions are of cheap plasticky and clicky buttons, but the six-button layout will probably win over beat 'em up fans, and this is also Sega's first pad with twin SNES-style top buttons.

Loading times are short. The spectacular boot sequence (in which the Sega Saturn logo coalesces from spinning polygon shards) takes five seconds, and you can expect *Virtua Fighter* to be up and running in another six or seven. This has confounded critics who said that even double-speed CD drives couldn't compete with carts. Sega (and Sony) have proved that with dedicated processors handling the drive (the SH-1 in the Saturn's case), negligible access times are possible.

Unfortunately, the only reason to buy the Saturn so far is *Virtua Fighter*. It is indeed a stunningly playable game – although its slightly glitchy visuals imply that the Saturn does have a hard time when asked to shift a load of polygons – but the other software available fails to do justice to the machine. And a look at Saturn's release schedule implies that a range of good games could take time to surface. Big titles that ideally would have been available at launch – like *Panzer Dragoon* and *Daytona USA* – have now been pushed back until the spring. Sega may have arrived in style, but the next few months will be crucial.











From top: boot-up, title, language select, music player with polygon spaceship animation



Dave Perry



i wish...

“I wish that free Rolodexes would be supplied to all console manufacturers. Next time they might use it and actually call some developers instead of creating hardware assault courses and uninformed restrictions.

I wish there was an 'FMV' virus which would find all pointless FMV sequences in game developers' computers and delete them.

I wish it was easier to get the plastic wrap off new CDs.

I wish developers would create more games that *they* would enjoy playing.

I wish they had fish and chip shops in the United States.

I wish I got a royalty every time the words 'interactive', information superhighway', 'edutainment' and 'virtual' were used.

I wish girls played videogames (stop hogging the machine and give your sister a go!).

I wish to say 'thank you' to Virgin for the great support they have given to our *Earthworm Jim* project.

I wish all consoles and movies would be released *worldwide* on the same day! I wish there was an approval committee for console software. If it's drivel, don't let some poor kid blow all his savings on it (games aren't expensive, garbage is!).

I wish **Edge** was easier to get hold of in the colonies.”

Dave Perry is president of California-based Shiny Entertainment, whose first game, *Earthworm Jim*, was released earlier this year.

Nintendo pins hopes on **Virtual Boy**

Nintendo's 32bit VR system has failed to excite the industry

The Harumi Centre in Chiba was the venue for the Shoshinkai show. The promise of Nintendo's new hardware proved a big pull

The November unveiling of the Virtual Boy in Japan signifies an important change of direction for Nintendo. Either it has gone completely mad or it deems the future of videogaming to be crude, red and likely to induce headaches.

That was the opinion of most delegates who attended the Shoshinkai festival at the Harumi Centre in Chiba, Tokyo. Shoshinkai is an annual event for Nintendo's distributors and was the chosen venue for the Kyoto company's revelation of its '32bit VR system'. The show ran for two days but **Edge** attended just the first – there was little else apart from new Super Famicom games to hold interest.

Nintendo's system was shown in two forms. Playable versions of the unit itself were installed on a trio of circular stands, and a giant enclosure was where a dramatic (ie 'is this really it?') presentation of the system's graphics and sound took place, with cardboard goggles distributed to anyone brave enough to enter.

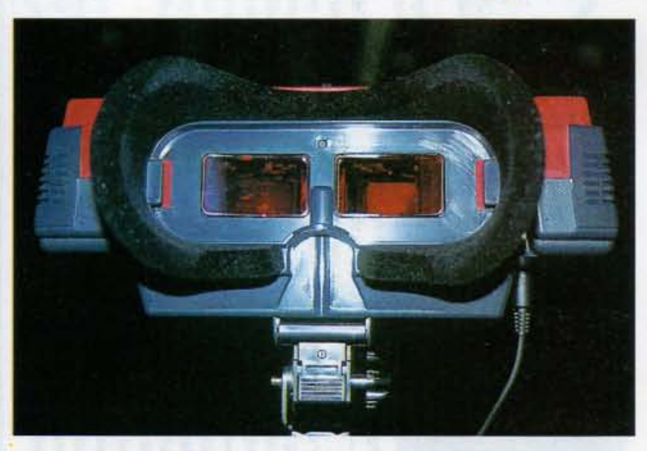
Nintendo's hardware resembles a Viewmaster rather than a VR system, with the player looking into the eyepiece to see the stereoscopic image. Just as the Game Boy screen was yellow, Virtual Boy's is red. And it's no more impressive, either. The hardware uses a 32bit RISC CPU to generate the twin images, with 'two high resolution. mirror-scanning LED displays'.

This technology comes from a Massachusetts company called Reflection Technology Inc, which specialises in virtual display hardware →





The Virtual Boy hardware has a red and blue body. A joypad with elongated handles is attached via a lead



Looking through the Virtual Boy is like sellotaping two red Game Boys to your face (ie the prototype wasn't particularly impressive)

Data stream

Marketing budget for *Magic Carpet*: **£200,000**
Marketing budget for *Donkey Kong Country*: **£2 million**
Percentage of targeted UK adults and children who are expected to have seen the Donkey Kong Country advertisements three times: **70%**
Marketing budget for Microsoft on updating their image: **£60 million**
Percentage of CD-ROM sales accounted for by Microsoft: **11.41**
Number of formats *Rise Of The Robots* is to be released on: **22**
Number of units 3DO claims to have sold: **250,000**
Present value of the videogames market: **£13.5 billion**
Projected value of the videogames market by year-end 1995: **£20 billion**
Growth in the videogames market over the last 15 months: **67.5%**
Increase in videogame sales caused by half-term holidays: **20%**
Estimates of annual cost to industry caused by piracy: **£400 million**
CD-ROM access time required to comply with MPC1: **1000ms**
CD-ROM access time required to comply with MPC2: **400ms**
Typical hard drive access time: **11ms**
Price recently offered for 156,931 aging games carts: **£200,000**
Dimensions of a 35mm film screen: **20x35ft**
Dimensions of an IMAX screen: **80ftx100ft**
Number of IMAX theatres in the world: **115**
Number of PlayStations available at launch: **100,000**
Number of defective Saturns that have caught fire: **10**
Cost of a single game of *Virtua Fighter 2*: ¥200 (£1.30)

→ and was formed by a team of MIT scientists. Nintendo Of America's press release distributed at the show reveals that 'Nintendo has obtained exclusive worldwide licensing rights within the videogame market to Reflection's virtual display technology', and that Virtual Boy is its 'initial application'.


Nintendo chairman Hiroshi Yamauchi (above) put on a brave face



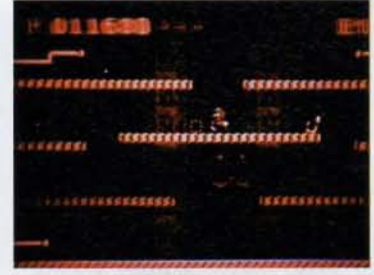
NCL officials demonstrated the VB to show delegates. Few were impressed with the crude monochrome display

It's difficult to convey just how crude Virtual Boy's graphics are. While the technology is presumably advanced for the cost, its potential for videogames is all but invisible in the first crop of titles. Nintendo unveiled three prototype games at Shoshinkai, all in playable form. First up was *Mario Bros VB* (no, really) – imagine a static screen and Mario hopping from platform to platform. *Space Pinball* is a standard pinball game with the 3D effect allowing the ball to travel beneath the table. *Telero Boxing* is just plain weird. Needless to say, all three were extremely early versions.

Ironically, Nintendo is expecting great things of the Virtual Boy. The company has stated that it plans to sell three million hardware units and 14 million game cartridges in Japan alone in the period from its launch in April 1995 to March 1996. The system will retail at ¥19,800 (£128), and three games will be available at launch, costing between ¥5000 and ¥6000 each.

Virtual Boy is on its way to the States, but whether it will make the journey to the UK hasn't been confirmed. Next month **Edge** quizzes its designer, Gumpei Yokoi (who was also responsible for creating the Game Boy), and asks: just what is Nintendo playing at?









Virtual Boy as captured by the Edge-cam. Clockwise from top: title screen complete with zooming letters; *Mario Bros VB* – possibly the 'flagship' title; the underwhelming *Space Pinball*; and *Telero Boxing* – hardly a threat to PlayStation *Boxer's Road*

What is it?

Perfected in 1948, this invention not only had a profound impact on computer technology but revolutionised the electronics industry as a whole. Without it, home computers would have remained an impossible dream

Specs

CPU: 32bit NEC V810 @ 10MHz
Dimensions: 217x254x110mm
Power: 6 AA batteries
Weight: 760g (body only)
Accessories: AC 100V adaptor
Battery charger

BUZZ words

frame-rate

frame-rate mate that's what you want get that polygon engine churning out those **frames** pal the more the merrier just get millions of the suckers down your scart lead and you're laughin' forget your dull pc flite sims that chug along at 10 **frames** a second i'm gonna get me a PlaySaturn that baby chucks out a cool 60 **frames** a second that's *six oooooh*-baby frames a second so your Ridge Racing-Virtua-Kick-Assing games are just the business read it and weep pc boys

Beginning of the end for **Video CD**?

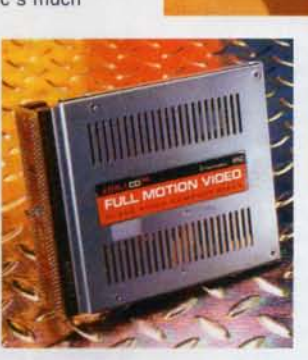
Edge wonders if the Video CD format is doomed before it's got off the ground

it is...

The transistor. Smaller and more efficient than the electron tubes (valves) it replaced, the transistor paved the way for the development of integrated circuits, which allowed huge computing power to be packed onto tiny pieces of silicon

Although companies like Philips and Goldstar are remaining resolute in their support for Video CD, some distinguished names are notably absent from the digital video rollcall. There are indications that giant Japanese electronics firms Sony and Matsushita/Panasonic are beginning to climbdown from the MPEG1 bandwagon in favour of high-density CD (HDCD), with its promise of much higher-quality sound and pictures.

For instance, Panasonic's much vaunted FMV adaptor for the 3DO has failed to appear and only the most basic of pre-production units has ever been displayed. Similarly, its planned £800 SA-VC10 mini-system – which has already been tested by some hi-fi magazines – has been delayed until the spring and will now not be available with the Video CD player.



Panasonic claimed that the machine was merely an example of what it was capable of, but now it looks as if it might have given up on the standard completely as its engineers work towards HDCD instead.

Elsewhere, evidence of Sony's support of Video CD has been limited to a low-ley launch of its VCP-C1 carousel player in Japan, which is not destined to appear in the US or Europe. Likewise, JVC has six different Video CD players onsale in Japan but has announced that none will be launched in the UK this year.

'There's no point in launching Video CD because it will be dead in a year and a half's time'

Even the UK leader in digital video, Nimbus Records, has canned work on Video CD in favour of HDCD. Nimbus was recently reported as saying: 'White Book isn't really good enough for the consumer or manufacturers. We're working on HDCD and we're not alone. Everybody who's in the business is doing this. There are three or four consortiums working on their own HDCD solution. There's no point in launching Video CD because it will be dead in a year and a half's time.'

Nimbus is currently working with Hollywood studios in order to develop a standard for the new high-density format. Already it states that a prototype HDCD player could be unveiled next summer, with the possibility of a player going onsale by Christmas '95.

All this is something of a slap in the face for Philips, which has expended considerable amounts of energy and hard cash promoting the CD-i's movie-playing abilities. But the truth is that MPEG1-standard Video CDs aren't really up to the task. Lacking the availability, cost and recordability of VHS, Video CD needs to offer at least substantially better quality than tape for it to take off as a mainstream format.

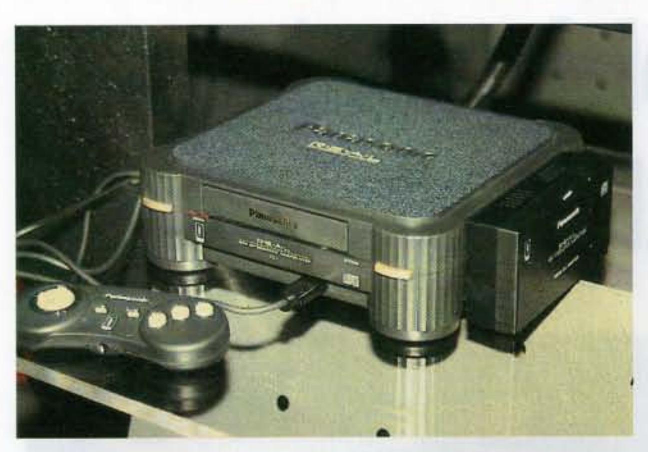
But because of the current state of CD technology and the limitations of →

The MPEG1-standard FMV carts for CD-i and CD³² (left). Are they really the way forward?

HDCD

Normal 5" CDs can store around 74 minutes of VHS-quality sound and pictures at 25fps when compressed to the MPEG1 standard.

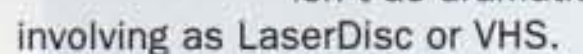
The new HDCD format – such as the planned system from Nimbus – will be able to store around 130 minutes of LaserDisc-quality movie footage on one side of one disc.



Panasonic revealed a pre-pro version of its FMV adaptor for the FZ-1 3DO player almost a year ago – and nothing has been seen since

→ single-speed drives, the compression routines used to put movie footage on to CD discard around 98% of the sound and picture information (the image resolution is quartered even before any compression takes place).

And the MPEG1 algorithms, which rely on interpolating between key frames, have to be pretty ruthless in order to squeeze several gigabytes of digital data into the 650Mb of a CD. Picture artifacts like mosaicking and haze effects mar any fast-moving scenes and the topping and tailing of the audio information – whereby high- and low-frequency sounds are stripped out – means that the sound isn't as dramatic or involving as LaserDisc or VHS.









MPEG1 video suffers from digital artifacts: a close-up from Patriot Games shows how fast-moving scenes tend to break up (top and middle). However, static images are realised perfectly (above)

Picture integrity is also at the mercy of the encoding system. Careful encoding can minimise artifacts, but if Video CD takes off, many more companies will be interested in releasing discs as fast as possible, with a resulting reduction in quality.

The irrevocable march towards digital video hasn't been halted by recent events, but it certainly opens the way for another format war. And Sony for one will not want to back the wrong horse after the fate of its Betamax standard.

An affordable massmarket HDCD system has been variously suggested as being anything from two to five years away. Which is neither long enough for Video CD to gain a firm foothold nor short enough for it to be replaced at the drawing-board stage. But whatever the timescale, Video CD is already proving to be intermediate technology.

Essential reading

The Cyberspace Lexicon



- **Bob Cotton and Richard Oliver**
- Phaidon, £19.99

ISBN 0714828262

In the crucible of science that was the Second World War, an Englishman called Alan Turing was set the task of breaking the enemy's codes. He, and the fresh-faced prodigies plucked from school to aid him, emerged with a little baby dubbed The Enigma Machine, now widely held to be the first electronic computer. Since then, computers have fired both our fears and our hopes. Urban vistas of humming, harmonious security have vied with pathological HALs in the battle for our wilder imaginings.

During the '50s and '60s, prophets of the new age of technology fretted over our ability to handle the 'information explosion' (televisions and telephones! Lord deliver us!). As Marshall McLuhan intoned, 'We extend our central nervous system globally, instantly interrelating every human experience.' Now computers, artificial intelligence (eg Jeremy Paxman) and information technology are as quotidian as they are bewildering. We seem to have got the whammy on this stuff but the rate of proliferation defies casual acquaintance.

Phaidon, the publisher traditionally known for its lustrous coffee-table art tomes, has given us a fine antidote to the data disease. Set out (as the title suggests) in dictionary format, its compass is commendably wide, ranging from narrowly technical terms such as conditional branching and luminance, to those pesky acronyms – CLUTS, MIPS, RIFF – to old friends like motion parallax, Gouraud shading and texture mapping (invented, it appears, by one Ed Catmull at the University Of Utah). Also included are more extended excursions into the wider picture: interactive broadcasting, 'surrogate travel' and 'The Edge', 'a cyberpunk metaphor for the place where the "new" develops', featuring, of course, this very organ. Still, **Edge** aside, this may sound a little on the dry side. Fear not. One of the pleasures of this robust volume is the quality and variety of its pictorial content. With glossy spreads of everything from *Virtual Valerie* to Brøderbund's *Myst*, 'lavish' barely does it justice.

So, notwithstanding the fact that volumes like these are invariably out of date before they're even published (there's no PlayStation or GLINT chip, for instance), this is a must-have for any self-respecting technophile.

London **graphics** show **draws** the crowds

Edge attends a big new event on the European show calendar

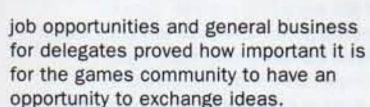
For a first-time event, the Computer Graphics Expo held recently in London was a resounding success. CGE is intended to be the European equivalent of the influential Siggraph show in the USA. Although smaller than Siggraph, it proved to be equally diverse, with over 70 companies exhibiting wares and services ranging from SGI VR systems to special-interest bulletin boards.

'It was great to see people from various backgrounds such as games, video post production and traditional animation mingling together and comparing notes,' commented **Rob Montgomery** of Digital Media International, organiser of both CGE and its sister event The London Effects and Animation Festival (see below). 'To my knowledge this has never happened before in Europe.'

The games community seems to have been particularly interested in the Interactive Entertainment Development Forum workshops, where presentations were given by such speakers as Peter Molyneux (Bullfrog), Gary Bracey (Telstar Electronic Studios), Fergus McNeil (SCI) and Nick Alexander (ex-Sega, now Future Publishing's chairman). The fact that these workshops generated so many ideas, job opportunities and general business for delegates proved how important it is for the games community to have an opportunity to exchange ideas.

It was also apparent that if you were a graphics artist seeking a career in the games industry, CGE was the place to be. Mirage (*Rise Of The Robots*) and SCI were just two of the many software houses hiring artistic talent on the show floor.





Criterion demonstrated its *RenderWare* 3D realtime API to the games industry (above). Silicon Graphics' Planet SGI stand was one of the best-attended areas of the show (left)

Dominating the show

was Planet SGI, hosted by Silicon Graphics and supported by 14 of ITS software partners. The stand showed off 3D visualisation, animations, special effects, virtual reality and 3D modelling packages for SGI machines and also demonstrated the raw power of the world's fastest →







Hoardos Korsh The Headtaker and his chum fight it out realtime in 47tek's much touted *Sento*, developed with Criterion's *RenderWare* API

Sony flops in Hollywood

Sony's much publicised entry into the film industry has turned sour. In 1989, the firm took a £3.2 billion plunge when it bought Colombia Pictures and poached a top production team from Time Warner.

Following a series of expensive turkeys, the entire production team has now left in acrimonious circumstances. Sony Pictures Entertainment is now worth less than half what was paid for it five years ago, having lost about £320 million (the total estimated cost of the PlayStation project) in each of the last five years.





***RenderWare* allows games developers to combine 2D raster graphics with 3D**

→ graphics-dedicated computer, the Onyx RealityEngine.

Wavefront revealed new releases of its suite of animation software, including the first UK showing of *Dynamation 2.0*. Using the laws of physics rather than keyframes (ie the animator's creativity) to control physical events, it makes natural processes such as fires easier to represent realistically.

Another major player in the 3D animation market is Alias Research. Alias' stand featured version 6.0 of its acclaimed SGI-based *PowerAnimator* package, which now includes *CharacterBuilder*, a new suite of tools for creating advanced character animations. *CharacterBuilder* incorporates sophisticated facilities for lip-synching and facial animations as well as motion-sampling and muscle and skin deformation.

PowerAnimator has now become a de facto standard for computer animation, used in films like The Mask and Jurassic Park, and, of course, in Rare's *Donkey Kong Country*. Alias' reputation is such that Nintendo has reportedly commissioned the company to create custom 3D graphics development tools for the Ultra 64.

Pre-rendered animations may well provide aesthetically pleasing cinematics, but for truly interactive gameplay, realtime rendering is where it's at. Enter Criterion's *RenderWare* (**Edge** 7), which offers a claimed 116,000 polygons per second on a Pentium/60. 47tek is soon to release a shareware version of *Creep-Clash*, its new PC fighter game developed using *RenderWare*, which should prove what the system is capable of.

As expected, both the immersive and desktop arms of the still embryonic virtual reality community were well represented at the show. Division and Virtual Presence allowed visitors to don HMDs, while Superscape demonstrated its PC-based virtual environment creation and visualisation software, *Superscape VRT* (used by Broadsword TV for the new BBC show Virtually Impossible).

Taking place

alongside CGE was the London Effects And Animation Festival. LEAF got off to a storming start with a gala awards evening at the South Bank Centre designed to reward both the technical and creative talents of people working in the animation field.

This was following by three days of seminars, talks and informal discussions covering computer animation, film special effects and interactive entertainment. It was a true celebration of diversity, with throngs of professionals from all corners of the animation field rubbing shoulders with celebrities like cult author Douglas Adams of Hitchhiker's Guide To The Galaxy fame and William Latham, a renowned artist working at IBM.

The high level of interest in CGE/LEAF (many workshops and seminars were sold out, especially those dealing with animation) has led to plans to expand the event for 1995. Digital Media expects at least 200 companies to exhibit and over 10,000 people to attend next year.

Perhaps the true strength of CGE/LEAF lay in the fact that it was not simply a trade show demonstrating the financial viability of technology, but also a showcase for the rich vein of genuine creative talent that exists in a field still regarded by many as dominated by 'anoraks'. This was an important crossover between art and technology, and if you just walked around the stands 'oohing' at the hardware, you missed out. E



CGE provided plenty of opportunities to get hands-on as well as meet the brains behind the hardware and software on display

Where is it?

This California town was the birthplace of one of the most significant developments in modern computing history. It was here that the Graphical User Interface (GUI) was conceived, which later surfaced in a seminal home computer





BBC TV's Virtually Impossible show uses PC-based VR software *Superscape VRT* (top). Raytraced art from Chaos Lab (above)

Sega still on top in Japan arcades

***Virtua Fighter 2* shows that Sega is staying ahead of the game**

it is...

Palo Alto, the home of Xerox's fabled Palo Alto Research Centre. PARC is credited with inventing the WIMP (Windows Icon Mouse Pointer) environment used in the world's first GUI machine, the Apple Macintosh





The only thing that can match the Japanese obsession with new consoles is their enthusiasm for the latest coin-ops. This Christmas, as many major manufacturers unveil exciting new units, Japanese arcade fans have been salivating even more than usual.

The launch of *Virtua Fighter* in December last year confirmed Sega's nigh-invincible position in the arcade arena. To appease aficionados of the game who have been clamouring for more, the company has just released its sequel. And in the same way that *Daytona USA* shot past *Virtua Racing* in terms of power and playability, the Model 2-based *VF2* manages to make the original look dull and uninspiring.

On the day of release, crowds of *Virtua Fighter*-obsessed punters turned up at major Japanese game centres to witness the machine being installed – posters announcing the event had been displayed in coin-op parlours for weeks previously and proved to be extremely effective in raising anticipation.

Edge attended one of the biggest game centres in Akihabara, Tokyo. It quickly filled as the appointed moment arrived, and within minutes of the power being connected, over 100 people were jostling to glimpse the screen. The consensus was that the wait had been worth it, as the stunning-looking and wonderfully controllable characters began to sweep each other (and the audience) off their feet.



The latest game to use Sega's Model 2 board is the wonderfully texture-mapped polygon racer, *Sega Rally*



It's only when you see it moving that you can appreciate how amazing *Virtua Fighter 2* really is

Across town, at the Ikebukuro Sunshine City Convention Centre, *Sega Rally* was wheeled out as the star attraction of Sega's arcade-dedicated booth at the Nicograph show.

Developed by AM3 (previously responsible for *Jurassic Park* and *Star Wars Arcade*), *Sega Rally* is driven by an enhanced Model 2 board, and the results are extremely impressive. Three tracks will be available when the game is released early next year, allowing you to scream across deserts, through forests and over mountains.

The differences between *Sega Rally* and its theoretical predecessor, *Daytona USA*, soon began to emerge. AM3 has dispensed with the multiple views and instead included a single, in-car, perspective. The addition of a rear-view mirror and a speedometer makes it obvious that the game owes a significant debt to *Ridge Racer*. It seems ironic that Sega is now looking to Namco for inspiration, rather than the other way around.

Arcades face taxing time

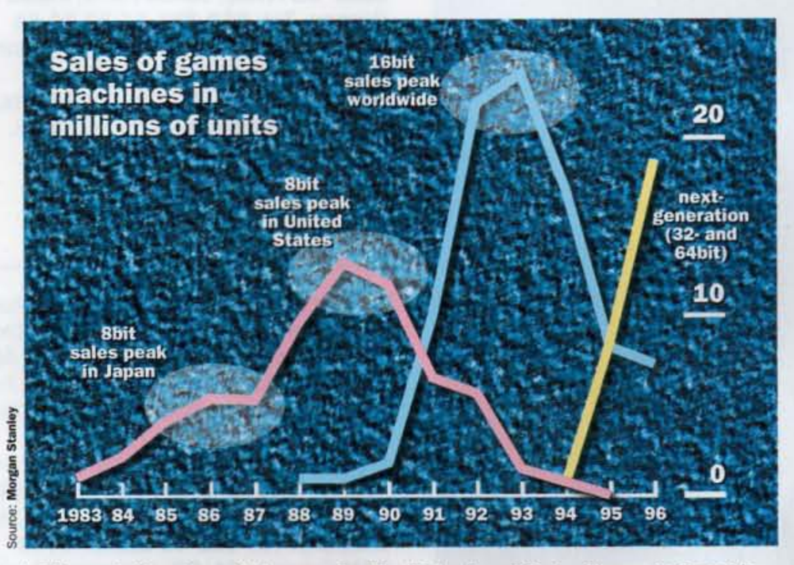
The recent budget may have been regarded as a non-event by the general public, but one group not so indifferent was the arcade industry. Buried in the small print was the announcement that the Gaming Machine Licence Duty, payable on all coin-ops, is to be increased. On 10p and 20p machines the duty will rise from £450 to £535.

Chancellor Kenneth Clarke justified the rise with the argument that the tax hadn't been increased since 1987. But arcade operators condemned it as a severe blow for an industry struggling to combat recession.

The result of the rise is that many machines may now become uneconomic and disappear from arcades altogether.

Hard times for **Sega** and **Nintendo**

Established game companies are finding the going increasingly tough



This projection shows that companies like Nintendo and Sega will soon be forced to depend on next-generation sales to compensate for the decline in the 16bit market

SNES, MD still on top

With profits crashing throughout the industry, sales falling and no sign of any upturn until next year, Gallup's latest userbase estimates for the UK to the end of 1994 make interesting reading.

The Mega Drive and SNES still dominate the home market, with four million units between them. Only the Amiga, which, eight years after its release, still possesses a sizeable installed userbase, offers any competition.

ST ownership has dwindled and Atari is now relying on the Jaguar. Unfortunately, according to Gallup, the Jaguar is in less than 20,000 homes, while the 3DO is limited to just 10,000 homes – that's one 3DO for every 400 16bit consoles.

The CD32 initially did better than expected, but the continuing uncertainty about Commodore and the availability of the new, cheaper consoles mean that its future is bleak.

The complete list of Gallup estimates is as follows:
Acorn: 400,000
Jaguar: 20,000
Amiga: 2,215,000
CD32: 60,000
3DO: 10,000
SNES: 1,500,000
Mega Drive: 2,500,000
Neo-Geo CD: 5000
PC: no total figure, but 160 000 were sold in September

Although the arrival of the next generation in Japan gives the games industry some cause for optimism, all the major players in the market are still being hit hard by the recession of the past few years. Nintendo, Sega and Capcom have all announced huge reductions in revenue for the first half of fiscal year 1994.

Nintendo, which has long headed the industry in terms of both sales and profits, revealed a 16% reduction in profits to £322 million for the six months to September 30. The company blamed the strong yen for most of its problems but it also pointed to tough price wars with its rivals. However, many people attributed Nintendo's poor showing to stagnation.

Nintendo's worst performance was in the US, where the dollar has lost over an eighth of its value against the yen this year and where Sega is particularly strong. Although Nintendo has more than 90% of the Japanese market, exports now count for only 38% of its sales.

Sega fared even worse. Although the Saturn provided a late boost, it wasn't enough to prevent a 43% reduction in profits, now down to £104 million on sales that have declined over 25%. And Sega has yet to face the threat of Sony.



But it was Capcom that took the heaviest beating, primarily because of its inability to find a worthy successor to the moneyspinning *Street Fighter II* series. With its profits down by a whopping 83% to just £9 million, the company's future in now in doubt. Shares have fallen by over 60% and this decline looks set to continue.

The main problem for many manufacturers is the speed of the decline in the 16bit market. Both Sega and Nintendo now have over ¥50 billion (around £320 million) worth of unsold cartridges sitting in warehouses around the world. Add to this Capcom's one million surplus copies of *Street Fighter II* and Atari's mistakes in the early '80s with its ill-fated VCS seem almost small scale. **E**



It looks like Capcom's *Street Fighter II* has reached the end of its considerable lifespan

This month on EDGE

Welcome to the **Edge** experience – a rollercoaster ride through one month in the life of the world's best games journal

Edge's wait for its own PlayStation from Japan this month was aggravated by the urgency of an impending magazine deadline. The news that it was being held in customs at Stansted airport (well, would you want to release it without 'testing the goods'?) led to much tearing of hair and gnashing of teeth. Desperate situations call for desperate measures, so **Edge** prepared to fill the pages earmarked for the *Ridge Racer* review with tips for *Rise Of The Robots* (things like 'don't buy it', etc). Luckily, a friendly UK importer stepped in and saved the day, hand-delivering one of the first machines to enter the UK.

Edge's attempts to keep the new arrival under wraps failed dismally. Word spread like wildfire around Future Publishing and within five minutes the office was shaking to the sound of about a hundred stampeding feet. Preparations for the ultimate gamesplaying experience included legging it down to the Sony Centre and buying a 25" multistandard telly with Nicam stereo, Dolby Pro Logic and digital comb filter – all at Future Publishing's expense, of course. Unfortunately, a pair of Linn surround speakers proved to be beyond even **Edge**'s advanced blagging abilities.

The race against the clock meant that **Edge** couldn't play *Ridge Racer* quite as much as it would have liked, and the time/space restriction resulted in a few of the game's finer details being passed over in the rush to get it into print. To rectify the situation, here are some more reasons why Namco's game is a classic:

1. It handles better than any other driving game – the sensation of losing the tail end on a tight bend is awesome. Nothing comes closer to driving a real car.

2. The sound is amazing. Not only is the music superb, but the samples (the airliner, the helicopter, the echoing tunnels, etc) are unmatched.

3. There's a challenge. After you've completed the standard tracks (wait until you see the ending), there are four extra races which travel in the opposite direction round the track. And they're tough.

4. The graphics are mindblowing. Ignore the occasional glitches and slowdown; these visuals are way, way ahead of anything seen on any other system. Effects worthy of note include the beautiful glow that the scenery takes on at sunset.

5. Although there's only one course, no two games are ever the same. So far, **Edge** has hit the helicopter and even landed on top of another car.

Edge games of the year:

1. Best fighting game: *Virtua Fighter* (Saturn)

2. Best racing game: *Ridge Racer* (PlayStation)

3. Best shoot 'em up: *Doom II* (PC)

4. Best sports game: *John Madden Football* (3DO)

5. Best pachinko game: *Smiley Policewoman Pachinko Hunter* (PlayStation).

Datebook

January

Winter Consumer Electronics Show January 6–9, Las Vegas Convention Centre. Tel: **010 703 907-7600**

Milia '95 Friday, January 6–9, Palais des Festivals, Cannes. Tel: **010 331 44 34 44 44**

ATEI January 24–26, Earls Court, London. Contact Peter Rusbridge on **071-713 0302**

IMA January 25–28, The Fairgrounds, Frankfurt, Germany. Contact Blenheim Heckmann GmbH. Tel: **010 49 211 901 9127**

February

Taiwan Amusement Exhibition February 8–12, CETRA Exhibition Hall, Taipei, Taiwan. Contact Creative International PR on **010 886 2321 5098**

Blackpool Amusements Exhibition February 21–23, Winter Gardens, Blackpool. Contact Janet Fairgrieve on: **0253 25252**

Electronic Imaging February 5–10, San José, California. Contact IS&T/SPIE on: **010 1 206 676 3290**

Virtual Reality World '95 February 21–23, Stuttgart, Germany. Tel: **010 43 51229 5760**

AOU February 21–22, Makuhari Messe, Tokyo. Contact the Amusement Operators' Union on: **010 81 3 3253 5688**

March

Spring ECTS March 26–28, Olympia. Tel: **081-742 2828**

World Of Entertainment March 10–12, Prague, Czech Republic. Tel: **010 422 2491 1681**

International Gaming Business Exposition March 20–22, Las Vegas, Nevada. Tel: **010 1 203 852 0500.** Fax: **010 1 203 838 3710**

May

Electronic Entertainment Expo (E^3) May 11–13, Los Angeles Convention Center. Tel: **010 1 914 328 9157** With the Summer CES now cancelled (it was supposed to be in Philadelphia), E^3 is now emerging as the main event for the games industry next summer.

Show organisers: if your show isn't listed here, it's only because you haven't told **Edge** about it. Tel: 0225 442244. Fax: 0225 338236. E-mail: edge@futurenet.co.uk. Or send details to **Datebook, Edge, 30 Monmouth Street, Bath, Avon BA1 2BW**

viewpoint



Express yourself in **Edge**. Write to: **Edge** letters, 30 Monmouth Street, Bath, Avon BA1 2BW

Sorry, it's yet another attack on your attitude to vapourware from some reckless fool who pulled the emergency brake and bought one of the next generation of games machines. Does it really matter which one? Let's just say that the hardware is underspecced by tomorrow's standard and the software provokes gut-churning flashbacks to the era of B-movies.

So I'm doomed. By next week my machine will be relegated, like Betamax and any country's space programme, to the closet of commercial nightmares. But wait a minute! Dost thou dare blend optimism with electronics?

I'm giving my machine four years. That's right. I will not be so fickle as to return it on the promise of a screenshot from another machine. I will tough out the 'B' period and guarantee any prospective 'A' developers an eager audience for their product at the end of the line. Picture those poor producers of entertainment, all working at soap-opera speed on another clone of a clone, all collapsing into their chairs sighing with relief, 'It's okay, they've given us four years', and actually plotting out an original bit of code.

What's happening here happens with everything. Even the first game of chess probably featured a jester piece which was inclined to perform anticlockwise three-quarter circles. But whoever stood up and shouted, 'This game will never compete with the splendid sport of jousting' can be rightfully held in history's contempt.


Does Sony's PlayStation smack of 'conceptual puberty'? Daniel Allsop fears for the future of videogames as development schedules contract

Call it conceptual puberty. A bit of a tangle on the way from an idea to a mature and healthy system. (Come on, people are still finding ways to exploit 16bit technology even now.) A little patience on the part of the parent and you've got the next President on your hands.

Daniel Allsop, New Zealand

A laudable view. It would be beneficial for everyone if each of these machines had the luxury of a decent lifespan – as long as that enjoyed by the C64 and Spectrum, for instance. No-one wants their system to be superseded as soon as it's removed from the box. And remember, **Edge** does not celebrate this continual rush towards obsolescence; it merely reports on it.

This Atari thing just won't go away, will it? The funny thing is that everybody seems to be blaming the wrong people. Your correspondents all blame you, when it seems to be your interviewees who make most of the anti-Atari remarks, and your interviewees blame Atari, when in fact it's the software companies who are to blame for most of Atari's troubles.

What is this lack of commitment that your interviewees keep complaining about? According to you, Atari's only problem has been with IBM failing to produce the machines in the volume promised. The machines are in the shops, both cheaper and in greater volume than 3DO or CD-i, but it's software that really makes machines, and where's the software going? All the software companies are doing is waiting to see how the machine goes before producing for it. Well, if nobody produces any games, of course the thing is going down the tubes. The software companies are responsible for a self-fulfilling prophecy.

Meanwhile, you refuse to back down on your review of *Alien Vs Predator*, and quite right too. I'm sure you meant every word, but for you to then claim that 'after the disappointing *AVP*, Jaguar owners will be pinning their hopes on *Fight For Life*' seems to be verging on the omnipotent. (And another thing: four out of ten is 40%. Don't you go getting pedantic with me, buster.) Surely you must have noticed that Jag owners, by and large, are not disappointed with


Deke Roberts thinks the Jaguar is doomed if software companies play it safe

AVP. You're on your own. Everyone from the venerable C&VG to the kids on Bad Influence (and me) think *AVP* is a fun blast. Surely you should be asking yourself why you're so out of touch with everyone else.

Not that there's anything wrong with you being out of touch, just as long as it's consistent. Back in the punk years I found that everything Charles Shaar Murray decreed as outdated and boring was probably worth a listen.

Maybe you should give us a list of your criteria, along with a few examples of what you consider to be good and bad, just like all the kiddie mags do. Or then again, maybe you should just keep on doing what you're doing. Just don't fall into the usual trap of believing that because you're a 'serious' mag, you must always be right.

One last little question. When my subscription copy of **Edge** pops through my door every month, the plastic bag is in a plastic bag. Why?

Deke Roberts, Oxford

True, the lack of thirdparty support could kill the Jaguar as surely as poor marketing or a crummy design. But you can hardly blame software houses for being wary of the Atari name. This is the same company that had the entire videogames market at its feet and then lost it; that manufactured a number of excellent machines and singularly failed to make the most of them. Just why would any company want to put their money into developing for the Jaguar, knowing that Atari does not have the money – or, some would argue, the expertise – to sell the machine in any great numbers?

We double-bag the subscriber's issue so that the special magic doesn't dissipate during its long journey through the postal system.



Anthony Ikeda nails his colours firmly to the mast, citing Commodore's CD32 as the most expandable and versatile of games consoles

I am writing in response to Daryll Ng's letter in the September issue of **Edge**. First, I would like to inform him that the CD32 is one of the most successful attempts at CD-ROM technology yet. Just remember, it was Commodore that first introduced CDTV. Sure, it wasn't successful, but it did guide Commodore in the right direction to produce the first CD-based games console.

The 'little grey box' can overpower many of today's games consoles and it has also been around for nearly five years now. The CD32 is the only games console I know of today that is capable of being expanded into a fullblown computer. Since when have you been able to do your homework on a Mega Drive or write a report on a SNES?

In Australia, to buy a CD32 base machine, SX-1 expansion module, disk drive and mouse would cost you $1,023 [£1= Aus$2 approx], whereas a PC costs $2999 to $3999. But why not connect your CD32 to your Amiga 1200 for around $170?

Commodore's liquidation showed the true popularity of the architecture when names like Nintendo, Sony, Samsung and even Philips stood in line to buy the Amiga technology. Are you keeping up with Commodore? Because Commodore is way ahead of you!

Anthony Ikeda, NSW, Australia

The CD32 (which was first launched in September '93 and so is actually only one year old) is a useful piece of kit that sadly remains underutilised by the programming fraternity. It outshines the CD-i on all fronts (32bit processor, double-speed CD drive, MPEG-capable), and so if Philips' machine can boast titles like *Chaos Control* and *Burn:Cycle*, it's a shame that Commodore's baby can't do the same.

However, calling it 'one of the most successful attempts at CD-ROM technology yet' is pushing suspension of disbelief a bit far. After all, it's merely an A1200 with a built-in CD-ROM drive – not really groundbreaking technology. And expanding the CD32 is an inelegant solution to home computing at best.

And whether the new improved Commodore can keep up with everyone else remains to be seen.

It seems to me that the ongoing debate some of your readers seem to pursue, re: your alleged bias for or against certain hardware platforms, is futile. Obviously, we would all like to think that our particular machine still has some relevance to the current scene. But the fact is that all hardware has a limited shelf life, no matter how good it is.

My own introduction to computing was via the humble Sinclair ZX81. Since then I have owned a Spectrum, Atari ST, Sega Mega Drive, Apple Macintosh (Centris 610) and Psion Series 3. All of these were, believe it or not, more or less 'cutting edge'. Currently, only the Mac, Psion and Mega Drive are still in use. The Mac will at some stage be subjected to major surgery, by means of a PowerPC logic board upgrade and the addition of a CD-ROM drive. The Psion 3 has been superseded by the 3A, which, doubtless, I will eventually purchase. As for the Mega Drive, although I use it occasionally, I must admit that technolust has reared its ugly head and I am following closely the fortunes of the Saturn, PlayStation and, to a lesser extent, the Ultra 64. Those of us with an interest in these things must at some stage arrive at the realisation that built-in obsolescence (read declining software support) is a fact of life.

I'm not saying that the older platforms don't have their uses. For example, my main use for the Atari ST was to run *Cubase* (MIDI sequencing software). This has since been ported to both *Windows* and Mac platforms, but for me its implementation on the ST has never been bettered. As for games, if you only want to run your favourite sprite-based titles, then by all means stick faithfully with your current hardware and enjoy.

Michael Wall, Orpington

Just because hardware is obsolete doesn't mean it's useless. Most machines have one or two games or applications that are specific to that platform

Continued next page



Michael Wall praises Atari's ST – a machine offering, he reckons, the best implementation of Steinberg's *Cubase* MIDI sequencer

viewpoint

and which remain state of the art, even though the hardware itself has been superseded. *Super Mario Bros* on the NES remains a classic game, despite the fact that the SNES is available and the Ultra 64 is on the horizon.

Obsolescence is very much a state of mind: if you were oblivious of the other machines available, you wouldn't feel the urge to upgrade. But as long as people are happy to dump their old systems in favour of expensive new ones, manufacturers will keep producing them.

Having read **Edge** since the off, I have witnessed your letters pages littered with readers' letters that seem intent on turning **Edge** into a conventional games magazine or, in the case of Amiga owners (like me), a successor to Amiga Power.

Why can't readers understand that **Edge** concentrates on the future of videogames? Substandard reworkings for the Commodore CD^{32} and uninspired and downright shoddy tributes to *Mortal Kombat* for the Jaguar – I am, of course, talking about *Kasumi Ninja* – are not the future of videogames. If they are, then maybe we should all go home right now – **Edge** included.

And a message for Graham Courtney [**Edge** 15]: of course ST Format sings the praises of the Jaguar; without a successor to the ST the magazine won't be in business, will it?

My predictions for future letters pages: requests for a cheats section (aaargh!), percentages for graphics and sound (ditto), and at least one letter from an Atari employee.

Finally, please never, ever turn **Edge** into the amateurish catastrophe that Ultimate Future Games has turned out to be.

Richard Downs, Worthing

No matter what people want from **Edge**, its remit will always remain the same: to report on the leading edge of interactive technology. And if we ruffle a few feathers in the process, then so be it.

Ultimate Future Games is actually designed for a younger audience than **Edge** and so is perhaps not quite what **Edge** readers expect. But the chances of **Edge** becoming amateurish or, indeed, catastrophic, are pretty slim.

I have been buying **Edge** since issue 1 and I find it an excellent source of information, particularly regarding the 'next-generation' machines from Nintendo, Sega and Sony.

Despite this, I'm afraid my letter actually centres on a complaint about this year's Future Entertainment Show. First, there was nowhere to buy console games – just a tiny Future Zone stand and maybe one or two others, all with pretty feeble games.

We're not all smart-arse PC owners. Sega had a large stand, but could you actually buy any of the many games being demoed? And after queuing for 20 minutes to see the 32X, what do I find? The first three people up the stairs got on the machines, and didn't stop playing them until the whistle went.

The first FES was massive and took up two halls. Last year Virgin, Ocean, Konami *et al* had their own stands where you could buy the latest games. Why not this year? Most of the stands on one side were selling either fountain pens or ice cream! And where were all the big autumn/winter games that we were promised (*Earthworm Jim, Street Racer, Donkey Kong Country*, etc)? There weren't even any demos of them. Where was Nintendo? Where was *Ridge Racer*? Where was *Killer Instinct*? Where was the PlayStation? Was it a bad move on my part to go on Thursday? Did all the above arrive on Friday?

Finally, do you have to print all of the letters from frustrated Jaguar owners complaining about the comments you made on *Kasumi Ninja* or *AVP*?

Reuben Easey, Worthing



A celebration of the latest in entertainment technology, or a feeble, frustrating farrago? Reuben Easey vents his spleen

The Future Entertainment Show was smaller than Future Publishing would have liked, but this was more to do with the state of the industry than Future's ability to host an event.

Many larger companies were reluctant to get involved because attending shows and building big stands is expensive. The videogames market is in a transitional phase where many companies don't know which format to back and they don't want to risk thousands of pounds promoting the wrong one.

We certainly don't print every letter about the Jaguar – for every one that makes it into the mag, there are about ten we simply scrunch up and throw in the bin.

Regarding the so-called 'next-generation console wars', I can categorically state that all future consoles will pale against the new Apple console (codenamed 'Pippin' – not my idea!). Having worked on the machine, I can categorically say that it will make mincemeat of Nintendo's Ultra 64, currently the most powerful Japanese console in development.

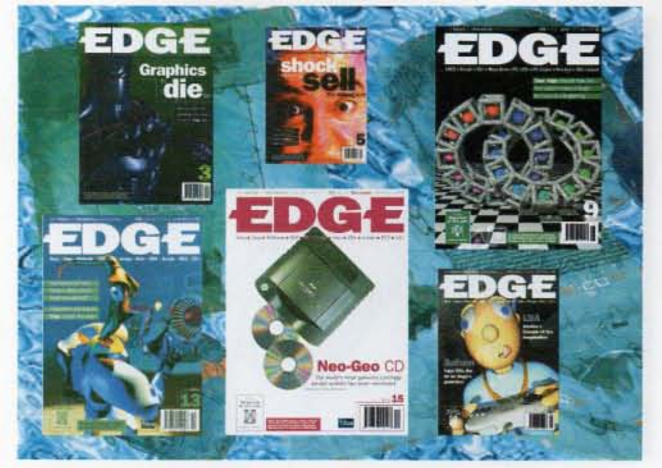
Now resident in England, I am a regular reader of your mag. One thing that troubles me is your bias towards the PlayStation, while arrogantly making light of other machines such as the Atari Jaguar, which is currently the most powerful machine in Europe and the States. Sure, you are right to point out that the PlayStation will soon be available on import, but the cost of the machine will undoubtedly be in excess of £450, and nobody in their right mind would pay that.

P J Ogden, Cambridge

Edge is a strong believer in Apple's technology, and the Pippin looks likely to be a superb machine. However, as always, success will depend on good software support.

Does **Edge** really have a bias towards the PlayStation? The Jaguar has actually received more editorial coverage than the PlayStation in the shape of features, interviews and reviews. However, **Edge** will admit to believing that the PlayStation has a greater potential than Jaguar – simply because in every respectit does . Even so, **Edge** hasn't 'made light' of other systems: the Saturn and Neo-Geo CD have both also received pretty extensive coverage of late.

The simple truth is that **Edge** can't please all of the people all of the time.



Richard Downs fears that Edge's position at the cutting edge could be compromised by the parochialism of some of its readers

I am writing in response to the music feature in **Edge** 15. All these musicians who think they are great just because they made a C64 sound good make me laugh. I admire their abilities, but if they can't create good music, who cares how good the sound is? I have an interesting set-up, sub-£10,000, with which I can easily knock up near studio-quality music. But in the hands of a crap musician it would sound… crap.

I spend many hours programming sounds from scratch, and even longer setting up effects for the tunes, and on top of that an awful lot of thought goes into chord routines. There are a lot of people who think they're really creative because they've got a good set-up with all the latest sounds, but music is something you are born with; you feel a tune inside you and a lot of work goes into realising it and having something worth listening to after hours, days, weeks, even months of hard work.

No matter how good your equipment is, if you haven't got the feeling, it just won't sound good. Rob Hubbard is a prime example. Lots of good C64 tunes. Give him a great studio in the USA and a four-channel Amiga sound chip and what happens? His tunes sound crap. Excellent sound quality, poor music. He burned out. I haven't heard anything memorable from Hubbard since *Populous*, and noted that with *Indy 500* he was using the Amiga like a C64.

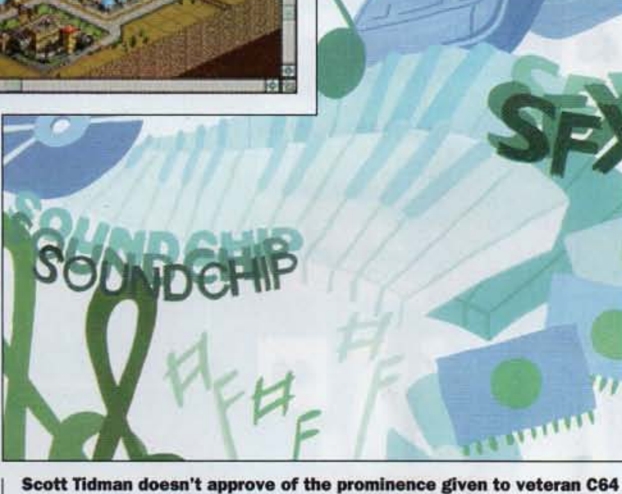
It could be that EA just wasn't paying him enough. Games companies must learn that they have to spend money to get good work. Until they realise that music (the right music) is every bit as responsible for the feel of a game as the graphics, and start paying accordingly, they will only get crap musicians and will therefore continue to consider videogame music unimportant.

Scott Tidman, Kent

Anyone who made the C64 sound good should be commended. Musicians often had as little as 6-8K to play with, while 2-3K was taken up by the sound driver. This would have to include as many as 30 different sound effects and up to a dozen tunes. So not only were they able to make these machines sound good but they were doing it under the most appalling restrictions – and to a deadline. You yourself say that you have the luxury of working on a number of different instruments with several months at your disposal. Try being as creative with one keyboard and a couple of weeks.



Why isn't the Mac seen as a serious games machine? (See letter from Simon Humphries)



Scott Tidman doesn't approve of the prominence given to veteran C64 musicians like Rob Hubbard in Edge's game music feature (issue 15)

I would like to know why the Apple Macintosh isn't regarded as a participator in the videogames industry alongside the PC and the Amiga.

I have dealt with all three machines. I have owned an Amiga 500 and a 486 DX2 66. Not happy with either, I decided to try a Mac, and it was the best decision I have ever made when buying a computer. For starters, the operating system is the best – nothing comes close. It's simple, clever and very powerful.

The Mac has the best specs, too. The new Power Mac 8100/110 has a PowerPC RISC processor running at 110 MHz with a 256k cache and can have 256 megabytes of RAM! It has a 2Gb hard drive, 16bit stereo sound input and output as standard, uses speech recognition and can display 16,777,216 colours at 800x600 as standard. And there are now loads of native PowerPC programs available.

But when I mention Apple to friends they say they are too expensive. Maybe in the days of the Quadra 900 and 700, which cost around £5000 for a machine that was less capable than an Centris 610, which when it was around cost under £1000

I am using a Mac Performa 630 (LC if you like) with a 66MHz 68040 chip, 8Mb RAM, 350HD video in card and TV tuner card. I got this lot for under £1200. Having owned a 486DX2 66, I know that the Mac thrashes the hell out of the 486 and is something to be desired.

The point I am trying to make is, why haven't developers converted popular PC games to the Mac? Sure, you can get *Civilization*, which is the only game you need, and *Doom* and *Doom II* are being released, as well as *Rebel Assault*, which beats the PC version hands down, but arcade games, such as *Cannon Fodder* and *X-Wing*, could work on the Mac as well.

Simon Humphries

The Mac isn't widely used as games platform simply because it hasn't yet made it as a home machine. Macs are popular in offices and design studios the world over, but there are still comparatively few in households. As the Mac increases its share of the home market, you'll see more games converted to it – and Apple's forthcoming RISC console, 'Pippin', will no doubt help the situation.

The features in **Edge** have always been impressive, but I have thought up a few more which I would love to see in future.

The first would be a feature on game designing. I'm sure many **Edge** readers have, at one time or another, thought of a brilliantly original idea for a game, but just don't know how to get it to a games company.

Secondly, I would love to see a feature on RPGs. This is a generally underrated and overlooked genre, especially as most of us Westerners have been raised on a strict diet of console and action games.

Anon

Edge is planning a new series of features at the moment. Your suggestions will certainly be seriously considered.

Toshinden Motor Toon Grand Prix **Iron Assault** Boxer's Road Dark Forces **Super Bomberman 3** Battle Heat **Team Innocent**

Prescreen



43



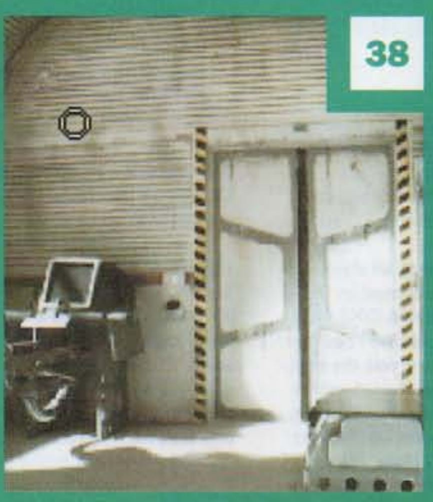
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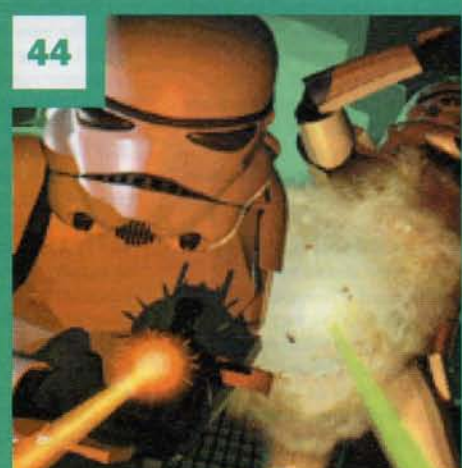
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Toshinden

Saturn *Virtua Fighter* isn't the only 3D beat 'em up in town. Prospective PlayStation owners now have their own contender for the 32bit crown



A pyrotechnical special move (top) sends the recipient flying (above)

Format:	**PlayStation**
Publisher:	**Takara**
Developer:	**In-house**
Release date:	**January 1**
Origin:	**Japan**

Effects like these have previously been the sole preserve of high-end graphics packages, yet the PlayStation handles them at speed on the fly

It's impossible to overestimate the popularity of *Virtua Fighter* in Japan. It's more than just a game; it's a fully fledged phenomenon. So widespread and fanatical is its following among Nipponese gameheads that weeks prior to the launch of Sega's machine, Saturns running the game dominated storefronts in Akihabara, Tokyo's 'videogames district', with eager gamers queuing up to play for free.

It's little surprise, then, given this huge ready-made audience for 3D beat 'em ups, that Takara should choose this style of game for its first PlayStation project.

However, *Toshinden* is far from being a cynical copy of the Sega game. In the same way as *Samurai Shodown* gave *Street Fighter II*'s gameplay a shot in the arm, so *Toshinden* gives the creators of *Virtua Fighter* something to think about.

For a start, *Toshinden* isn't just a straightforward fist fest: the combat features weapons, both edged and otherwise. These don't replace traditional punches and kicks, though – instead, the intention is to offer a game style that allows players to build fighting skills based on a combination of both attack styles.

While *Virtua Fighter*'s array of taggable hits and spectacular slams is impressive in its own right, it's easy to see why some gamers – weaned on a strict diet of flash kicks and fireballs – didn't warm to the game as quickly as Sega had hoped. So, doubtlessly with this in mind, Takara has primed each character with a choice selection of supernatural moves.

The company has also explored the potential of a 3D fighting environment



The backgrounds in *Toshinden* are gorgeous, but even more impressive is the PlayStation's use of transparent textures (Ellis' outfit, above)













Here, both contestants have chosen to fight as Ellis. Player two lets fly with a series of blows (top to bottom): straight roundhouse; the same move reversed; a knife slash; and a rising spin special attack



Unlike *Virtua Fighter, Toshinden* allows players to dodge sideways, as shown by Ellis' cartwheel (above and top right)

more fully than Sega. Whereas the gameplay in *Virtua Fighter* operates in a single plane, the characters in *Toshinden* are able to move relatively freely around the game's square combat area – in other words, they move 'into' and 'out of' the screen as well as from one side to the other. Whether cartwheeling out of trouble or buzzing around an opponent's head after performing a move which turns them into a fizzing ball, these fighters fully exploit the scope of their setting.

Takara claims that both standard and special attacks will be quick and simple to unleash, thanks to the PlayStation's four shoulder buttons. However, the more complex character designs make the fighting action appear slightly more confusing than it is in *Virtua Fighter*, with its cleaner lines and purer colours.

But it is *Toshinden*'s graphics that will surely generate most excitement – at least initially – amongst a gaming community hungry for tangible evidence of the Sony machine's performance. Forget plain, unshaded polygons and start getting used to Gouraud-shaded, texture-mapped everything.

From the fully modelled backdrops – including a formal Japanese garden and a rooftop scene at night – to the obvious effort that has gone into making individual limbs look solid, the game rarely fails to draw wheezes of amazement from onlookers.



Blows don't connect any more solidly than this (top left). One of the few indoor stages (middle). The 'camera' zooms out (above)

Continued next page

Even apparently superfluous details like the celebratory antics of the victors of each bout reek of imagination and flair. For example, when Mondo casts his opponent from his raised ring, he spins his spear around and over his head, then brings it to rest across his shoulders, draping one arm over it as he bellows a scornful laugh. Another honourable mention must go to the magnificent transparent togs sported by Ellis. The truly remarkable thing is that convincing effects like these have previously been the sole preserve of high-end dedicated rendering packages, yet the PlayStation handles them at speed on the fly. The game now shifts 90,000 polygons per second, and moves even faster than *Virtua Fighter*. However, *Toshinden*'s animation does lack some of the finesse of Sega's flagship game – it's simply not as fluid or realistic. And the sound effects and music are also outshined by those in the Sega title.

If Takara's own 40-strong development team can clean up both these elements prior to release, then those people who held out for the PlayStation rather than plumping for the Saturn and are now chomping at the bit for their own *Virtua Fighter* may find their commitment amply rewarded. ∎











The game's ever-changing viewpoint creates some spectacular situations (top left). Those familiar with *VF* will find that *Toshinden*'s pre-bout camera zooms are very similar (top right). Note the accurate shadows (above right)

The fighters

Toshinden features eight fighters, plus a non-selectable end-of-game boss. Japanese fans like to know background details of game characters, which is why Takara has supplied potted biographies for each.

Kayin A Japanese-Scottish warrior with a large sword.
Run-go An American who wields a metal rod – apparently the strongest weapon in the game.
Eiji From Fukuoka, Japan, this chap brandishes a heavy Japanese sword.
Fo A mysterious wizard with a vicious metal blade attached to each arm.
Mondo Uses a spear with interchangeable heads.
Sofia An ex-KGB agent with the fastest weapon in the game – a whip.
Duke This Frenchman hefts a magically extendable two-handed sword.
Ellis A circus dancer who uses a simple sword.





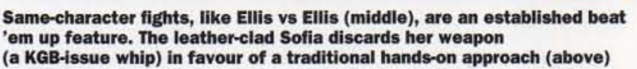


As well as using this blue bubble (top) against opponents, Fo can actually climb aboard it. Kayin demonstrates a drilling sword thrust (middle). Even creases in clothing are accurately detailed (above)









Same-character fights, like Ellis vs Ellis (middle), are an established beat 'em up feature. The leather-clad Sofia discards her weapon (a KGB-issue whip) in favour of a traditional hands-on approach (above)



Motor Toon Grand Prix

Sony's eccentric PlayStation racer is wildly different to *Ridge Racer* but could prove to be an equally jawdropping achievement

Format:	**PlayStation**
Publisher:	**Sony Computer Entertainment**
Developer:	**Poly's/ Bandit Inc**
Release date:	**Mid-Dec (Japan)**
Origin:	**Japan**



Clockwise from top: one of the plethora of views; off-roading; selecting a car



Sony's professionalism is evident throughout *Motor Toon Grand Prix* – this is no static screen



Nintendo's well-received SNES game *Stunt Race FX* (**Edge** 11) was the first racing game to feature vehicles with obvious personalities. The bug-eyed cartoon cars and trucks created by producer Shigeru Miyamoto were an endearing testament to the Japanese penchant for cuteness. Crude though the polygon vehicles were, they came alive when in motion and acquired a character all of their own.

Motor Toon GP, Sony's first major in-house PlayStation game (a thirdparty developer, Bandit, has joined Sony Computer Entertainment for the project)







Speeding down a hill (above). In-car view (above right). Note the colourful backdrop of hot-air balloons. Negotiating a winding bridge section (right)

treads the same tracks as *Stunt Race FX*, using the PlayStation's powerful texture-mapping abilities to render a set of warping, twisting vehicles that owe more to Roger Rabbit than *Virtua Racing*. And it does it all in realtime with astonishing ease.

Gone are the Susumu Matsushita cameo characters seen in **Edge**'s previous look at the game (issue 15). Instead, the cars themselves are left to do all the talking. The plain Gouraud-shaded polygons that made up the vehicles earlier in development have now been enhanced with

The cars shrug and rock with a bizarre elasticity, morphing and mutating in a fashion that would bring a tear to the eye of Uncle Walt himself



At times, the game's Roger Rabbit-style vehicles transmute into fully animated cartoon characters. Bizarre



The game occasionally encourages you to stray from the beaten track

texture-mapped surface details like eyes and other humanesque features.

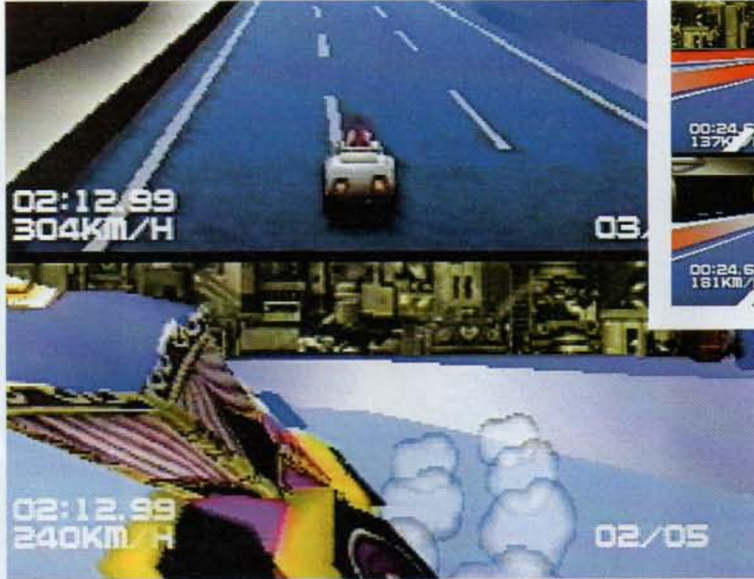
In a further effort to capture the cartoon feel so beloved of Japanese gamers, the cars' behaviour has also been altered. As they amble around the game's 12 different tracks, they shrug and rock with a bizarre elasticity, morphing and mutating in a fashion that would bring a tear to the eye of Uncle Walt himself.

But it's the game's playability that was expected to be its greatest strength. And, ironically, this is where things appear to have gone slightly awry. Compared to the dramatically overplayed handling characteristics of the *Stunt Race FX* cars, the vehicles in *Motor Toon Grand Prix* are rather reserved. Drift turns and powerslides

Continued next page

Continued

Just as *Ridge Racer* is in a class of its own in the serious racer genre, *Motor Toon GP*'s outlandish visuals give it the chance to carve a unique niche for itself



The twoplayer tracks are strewn with obstacles (above). Various views are selectable here too (left)

fall by the wayside to be replaced with a stricter tarmac-hugging experience.

It seems that *Motor Toon*'s gameplay will adhere to the promises made by project director Kazunori Yamauchi, who stated in **Edge** 15 that he wanted the handling of the cars to be as realistic as possible. A fine intention, but one that could sit uncomfortably with the decidedly unrealistic nature of the cars.

Some people will also be disappointed by the lack of the promised link-up option. They'll have to wait a while longer – possibly until Namco's proposed *Ridge Racer 2* – before being able to share a racing experience via the PlayStation's link-up facility. In the meantime, *Motor Toon GP* offers a splitscreen mode and a new selection of tracks specifically designed for multiplayer action. The scenery has been simplified in order to maintain the game's ludicrously smooth screen update, but there are more ontrack obstacles than in the comparatively free runs of the oneplayer circuits.

Unlike the cars, the playing environment has remained mostly unchanged and is as breathtaking as ever. The undulating landscapes are convincing and there's a fair sprinkling of texture-mapped roadside objects. The use of colour in particular breaks new ground, with smooth graduations of hue giving the game an appropriately surreal plasticky look.

The sound is also well-orchestrated. The music, which plays from the PlayStation rather than from CD, is cutesy but catchy, and the sound effects are superb – driving through a flock of sheep, for example, is accompanied by a cacophony of fittingly worried bleats.

Just as Namco's *Ridge Racer* is in a class of its own in the serious racer genre, *Motor Toon GP*'s outlandish visuals give it the chance to carve a unique niche for itself. Whether it will work as a racing game has yet to be determined.







Sections of the *Motor Toon* world in SGI-rendered form. Plasticlake (middle) allows the player to shoot down tubes









***Motor Toon* includes five different *Virtua Racing*-style perspectives (including a rear-facing view) which you can switch between smoothly and easily. Even more may be made available via a cheat**

Iron Assault

Virgin looks set to continue the trend towards 3D PC games with a robotic action-strategy offering from Italy

Format:	**PC**
Publisher:	**Virgin**
Developer:	**Graffiti**
Release date:	**January**
Origin:	**Italy**

With the PC game market becoming increasingly cluttered by *Wolfenstein/Doom*-style titles, developers are being forced to look at new ways of improving either the graphics technology or the gameplay. Virgin's *Iron Assault* opts for the latter approach, with extra attention being paid to the plotting, in-game atmospheric techniques, and gameplay that becomes increasingly strategic as you progress. The aim is obviously to please the traditional Microprose gamesplayer as well as the *Doom*-heads.

The storyline is typical futuristic fare. You play a member of a band of rebels fighting against a mighty corporation which is on the cusp of world domination. All combat is performed by huge robotic war machines over various Earth locations. There are offensive, defensive and recovery missions on offer, all of which involve a substantial amount of blasting and more than a little cat-and-mouse strategy.

Initially the game works in a linear fashion, with a series of missions to put beginners through their paces. Success in each mission has an effect on the rebel cause, and may also result in the development of new weaponry or defence systems. After you've



All the visuals in *Dark Forces* started life as physical models before being digitised

One of the most intriguing aspects of the game is the use of stop-motion animation for the pre-shot scenes



Night sights are handy for indoor work – enemy robots have a habit of taking potshots from the shadows



Torching an enemy robot in the heart of an industrial war zone. *Iron Assault*'s 3D engine uses flat floor mapping, just like the *Doom* games



A robot thuds across the plains. Every sprite animation in the game was produced by digitising a model, then retouching the image to regain clarity



A second cockpit view is available in all models of rebel robot, offering a smaller viewing window but more tactical screens on display at one time

Judging by this scanner shot of an arctic wasteland, ***Iron Assault*** **looks like a not-too distant cousin of** ***Battlezone***

The wide city streets begin to look just a little less spacious when mighty war robots are sallying along the roadways





The Lone Wolf rebel base (top) is a mixture of ***DPaint*** **and a digitisation of a specially built model. This rebel base interior (above) was created using the same method**

completed a few missions, you're rewarded with promotion. This inevitably leads to harder tasks and extra responsibility, with other rebel robot pilots to give orders to and, later, campaign screens to get involved in. These screens depict the various friendly, enemy and conflict areas, and all the supply routes between them. Here you're given freedom to get involved in any conflict, which means that wider-ranging strategies can be formed. The ultimate promotion is to the rank of general, at which point you have to purge four whole continents of the enemy forces.

The 3D engine itself doesn't impress as much as *Doom's*, but it does have one feature which id's offering lacks: form light-sourcing. As Graffiti's **Antonio Farina** explains, 'When missiles are fired down city streets, the walls of skyscrapers actually glow as the projectile passes by, with one final flare lighting the scene as the missile hits home.'

It's a simple trick but an effective one. 'Another thing players will appreciate,' continues Antonio, 'is the way everything in the gameworld can be damaged, whether it's a section of building, a lamppost which can be trampled under the feet of a robot, or even another rebel vehicle.'

One of the most intriguing aspects of the game is the use of stop-motion animation for pre-shot scenes, rather than the traditional Silicon Graphics or *3D Studio* method. Antonio again: 'The guy who handled all the in-game graphics and movie sequences joined Graffiti after working in the film industry, bringing model-making, blue screening and stop-motion skills to the title.' The results can be seen in the way the sprites are convincingly animated, as well as in the Terminator-style intro sequence and assorted in-game minicam shots.

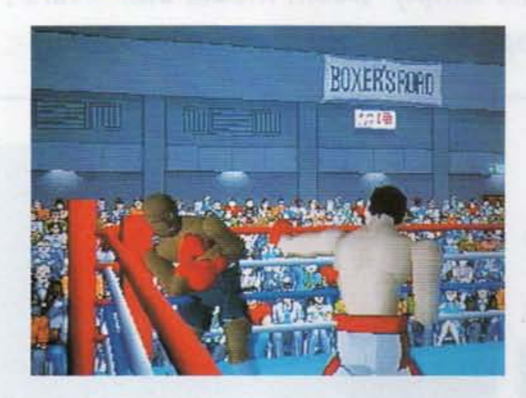
After 18 months in development, *Iron Assault* is set for release in January. It will be interesting to see how its reliance on depth of gameplay rather than intuitive blasting goes down with *Doom* fans.



Backdrop objects and sprites become pixellated in close-up. When in motion, the enemy robots convey a real sense of weight

Boxer's Road

After years of being sidelined by flashier beat 'em ups, the boxing sim could be about to make a comeback



Format:	**PlayStation**
Publisher:	**New**
Developer:	**In-house**
Release date:	**February**
Origin:	**Japan**

Boxing games have historically been a bunch of makeweights with glass chins and little staying power. *Boxer's Road,* however, looks much sturdier than its predecessors, with impressive polygon fighters that you can watch brawling from a range of different perspectives.

There's a great emphasis on training – even before you start you have to take tests to become a pro. When training for a fight you tailor your regimen to your opponent's strengths and weaknesses, working on certain punches and learning to avoid his favoured strokes. You even get to choose your boxer's diet.

The effectiveness of each of the many different punches depends on several variables. These include the accuracy of the punch, how well – if at all – it's blocked, and whether the boxers are moving. Knockdowns cause more damage if certain punches are used, but as a general rule it's best to throw in the towel if you're hitting the canvas too often or you'll start to take permanent, career-ending damage.

Boxer's Road is the most original boxing game since the pioneering polygon-based *4D Sports Boxing,* released for the PC in 1990. And Saturn owners can look forward to a similar game from JVC.

It's best to throw in the towel if you're hitting the canvas too often or you'll start to take permanent, career-ending damage





Close up, the boxers look surprisingly unblemished (above). An external view shows the fighters in the corner (top left)





***Boxer's Road*'s firstperson viewpoint provides real in-your-face action**

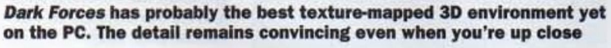
Dark Forces

Is LucasArts' new game simply '*Doom* meets Star Wars', or does it offer a new hope for the 3D blasting genre?

Format:	**PC**
Publisher:	**LucasArts**
Developer:	**In-house**
Release date:	**January**
Origin:	**US**







Dark Forces **has probably the best texture-mapped 3D environment yet on the PC. The detail remains convincing even when you're up close**







There can't be many more bankable names than George Lucas' Star Wars brand. The success of the 1977 movie paved the way for two sequels (so far), a bewildering range of toys and tie-in merchandising, and several videogames. *Dark Forces* is the latest game inspired by the sacred cow of '70s science fiction, and with it the LucasArts empire is out to conquer the *Doom*-inspired 3D shoot 'em up genre.

The character you play in *Dark Forces* is a former Imperial Navy operative who now works as a mercenary for the Rebel Alliance, infiltrating bases, stealing information and performing other sensitive tasks. The plots of the missions run alongside the existing Star Wars stories and occasionally touch on the characters and action from the movies – Darth Vader and Jabba The Hutt both make cameo appearances. Scenes at the end of each mission update the story and show how you've affected the course of the rebellion.

Dark Forces' texture-mapped graphics drip with details from the Star Wars universe, and they help give the game real atmosphere. The Death Star level is the best edxample of this. Not only does it have the correct architecture and accurate floor plans, but it's filled with stormtroopers, Imperial officers and guards. Even the tiny 'dog' robot that Chewbacca scares away in Star Wars appears.

Beneath the attractive graphics is a superior game engine – it's more

***Dark Forces'* beautiful texture-mapped graphics drip with details from the Star Wars universe**

















There are ten different weapons available in *Dark Forces*. 1 The humble 1976 goalie gloves. 2,3 After a while, you can move on to more powerful blasters. 4 This is the *Dark Forces* equivalent of *Doom*'s minigun. 5 The four-barrelled gun is impressive. 6,7 But the heavy mortar and the laser cannon are truly formidable. 8 The most powerful weapon is a top-secret Imperial research project. You find the plans early on and collect parts on later missions

detailed than other 3D firstperson-perspective games, and it offers a full 3D environment. This means that rooms are stacked on top of rooms, and consequently the levels are structured like real buildings, unlike those in *Doom* and *Doom II*.

It's also possible to look up and down to case levels and spot switches. And even at the highest detail setting on a relatively fast PC (486 DX2/66), it's a very speedy game, making it easy to tear around corners straight into a posse of Imperial stormtroopers.

There are plenty of weapons to play with, including land mines, thermal detonators, a mortar and various blasters. There's no lightsaber, however, because big George is quite precious about it – apparently, only a Jedi is able to use the weapon and therefore Luke is the only rebel who can pack one.

More significantly, the gameplay is less about blasting and more about tactical exploration. In most missions you have to either find something, kill someone or blow something up, and it's often better to run away from a fight than go charging in with all guns blazing. Your character can collect more than just guns – various other objects are used in puzzles within levels, making *Dark Forces* a much more thoughtful game than *Doom*. In all, LucasArts is hoping to have 50 missions for you to work your way through, and claims that the game is around twice as big as *Doom II*.

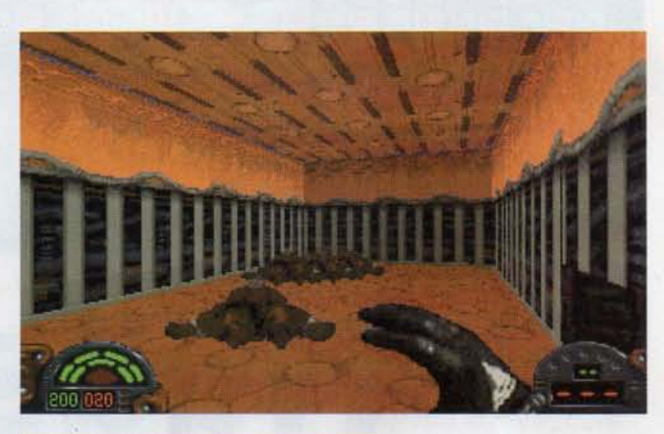
LucasArts, like its founder George Lucas, has less of a reputation for originality than for well-crafted reinvention. The company set new standards for graphic adventures and space sims with titles like *Sam And Max* and *X-Wing*, and *Dark Forces* looks set to repeat the success of those games.





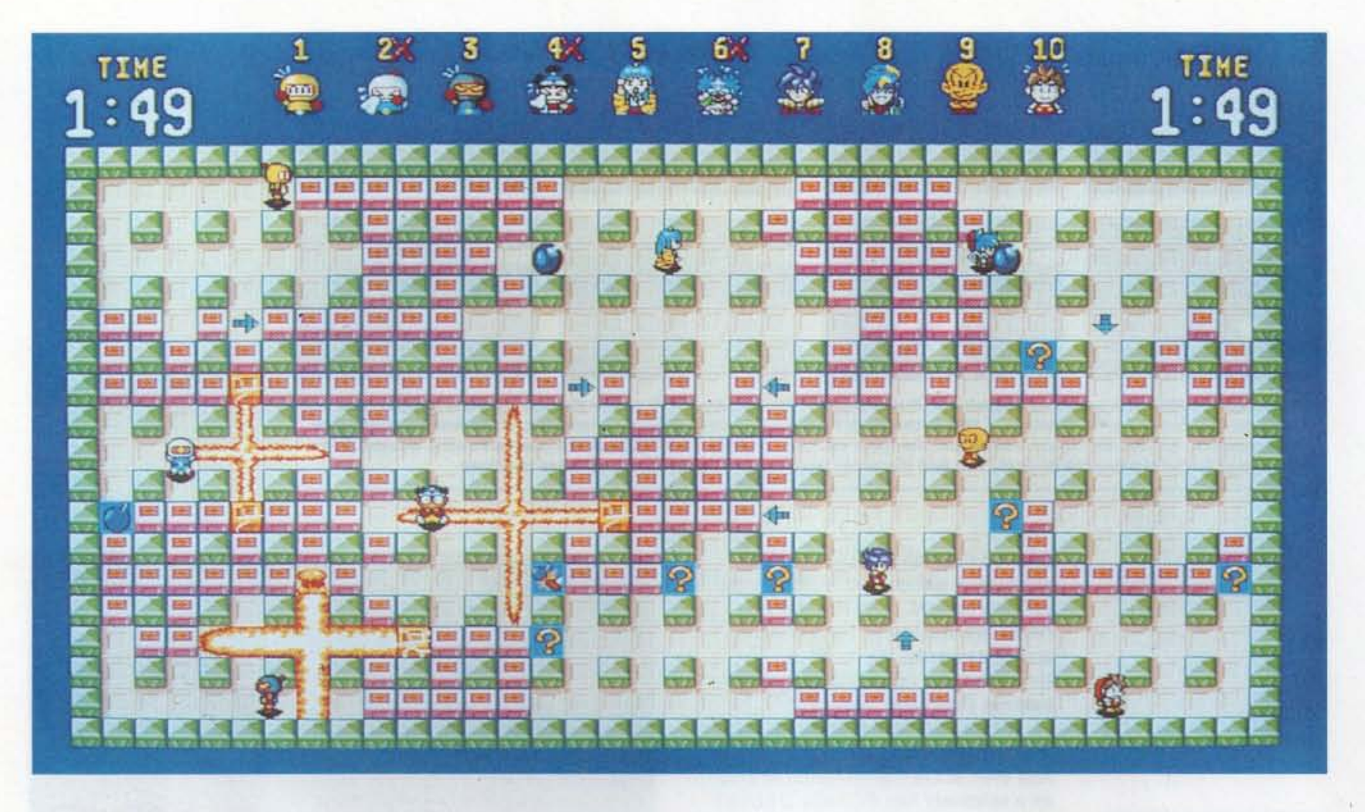


The cut-scenes of *TIE Fighter* and *X-Wing* have been replaced in *Dark Forces* by rendered sequences






In the Jabba's Revenge mission you wake up in monster pit with no weapons. To escape, you have to crawl through a network of tunnels



Hudson Soft

To celebrate its partnership with Virgin UK, Hudson Soft invited **Edge** to visit its Japanese headquarters in the northern city of Sapporo

Hudson Soft is not your average Japanese videogames outfit. This is a company with overseas interests as diverse as television and movie production and coin-op museums. Recently, it has even been involved in raising AIDS awareness among young people.

After establishing itself with programming languages and utility software in the early '80s, Hudson began to focus upon what was to become its true vocation: games. Its original titles and conversion work from 1984 onwards rapidly gained it recognition as an industry leader, nd its PC Engine conversion of Irem's arcade smash *R-Type* is still regarded as the system's definitive contribution to the shoot 'em up genre.


Hudson Soft's research and design centre in Sapporo is the company's Japanese HQ

Hudson's hardware achievements are as formidable as its software successes. In 1987, in collaboration with Japanese giant NEC, it produced the PC Engine, arguably the first machine to deliver affordable arcade-quality gaming to the home. Only a year later it pioneered CD-ROM storage in the form of NEC's PC Engine add-on, the CD-ROM².

Although it enjoyed only minor success in the US, the PC Engine gained a huge following in its native land, where a combined Engine and CD-ROM unit, the PCE Duo-RX (the







Hi-Ten Bomberman **(top), arguably the best multiplayer game in the world, runs on a high-definition TV. Its creator, Katsuhiro Nozawa (left)**



SFC *Super Bomberman 3*, demonstrated by head designer Tatsumitsu Watanbe

machine's fifth incarnation), was recently launched.

Hudson is, of course, best known for its *Bomberman* series. The original game of bomb detonation – clumsily entitled *The Bomber Man* – was written in 1980 purely as an exercise to demonstrate the power of Hudson's own BASIC compiler. It eventually enjoyed a small-scale release in Japan as a oneplayer PC game, with just one type of bomb and one enemy.

It wasn't until the arrival of Nintendo's Famicom system that the concept was revived. Struggling for inspiration after cartridge hits such as *Lode Runner* and *Star Force*, Hudson Soft plundered its back catalogue and happened across the game that would prove to be its crowning glory.

After seeing power-up systems in popular shoot 'em ups of the day, the game's designers incorporated a similar concept into *Bomberman* – bombs could be increased in strength by collecting icons. A concept that, of course, made *Bomberman* a classic lesson in competitive gameplay.

'I personally believe that the Famicom version of *Bomberman* is the one and only version of the game'
Nakamoto Shinichi, Hudson Soft

But it was a still only a twoplayer game. NEC's technology was to change that. 'We were really lucky that the PC Engine had a multitap,' reveals **Nakamoto Shinichi**, Hudson Soft's director of R&D. 'Without it, the PC Engine version would have been merely a reproduction, and would probably soon have been forgotten.'

The development of multitap hardware was arguably the single most important factor in *Bomberman*'s success. It made the game a true party experience, one that managed to induce more competitive energy in its participants than probably any other game before or since.

And *Bomberman* is still going strong. Hudson's most ambitious game to date is *Hi-Ten Bomberman*. But you won't see it turning up in the home. The game will only run on Hudson's in-house hardware – a combination of custom PC and stripped down PC Engine technology. It is aimed specifically at the exhibition/show market, and its unprecedented tenplayer capacity has already proved a big draw on recent tours in Japan. The size of the playing area and the number of players means it has to use HDTV technology – the first game to do so.

And it certainly is an experience. It's a simple equation: multiply the fun of standard *Bomberman* by two and you arrive at the entertainment provided by *Hi-Ten*. It excels as a demonstration of both cutting-edge display technology and lovingly crafted gameplay.

Although the system has only enjoyed floor space at Japanese events, it may not be long before British audiences get a taste of the action. Hudson has firm intentions to bring *Hi-Ten* to these shores, although dates and venues have yet to be agreed.

Despite the hi-tech adventure of *Hi-Ten Bomberman*, Hudson is still →









The latest version of Hudson's explosive classic is *Super Bomberman 3* for the Super Famicom

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Edge tested the PC-FX with the help of its lead designers, Koji Arai and Kazunori Yasui





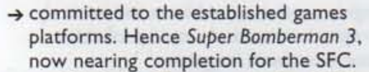






Battle Heat **is now out for the PC-FX. All the moves are prestored in anime form and played back,** ***Dragon's Lair*****-style. CD access is very fast**

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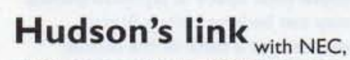


→ committed to the established games platforms. Hence *Super Bomberman 3*, now nearing completion for the SFC.

This is the first game in the SNES series to allow five players to take part – the fifth player starts in the centre of the playing area. With more collectibles and extra level details, including mine carts and even creatures to ride on, the game promises to offer more variety than previous *Bomberman* outings, if nothing else.

The second game in the series, released only recently in the UK, met with a fairly lukewarm reception among die-hard fans of the original. The main criticism levelled at it was that the gameplay had been tinkered with just a tad too much – familiar features had been thrown out and replaced with new, but not necessarily better, ideas. And *Super Bomberman 3* has been tinkered with even further. Whether it will appease or further annoy its fans will no doubt become clear on its release in April '95.

Despite the multiplayer game's following, the anticipation surrounding the third SNES incarnation, and the HDTV *Hi-Ten* system, Nakamoto Shinichi still hankers after the old days. 'I personally believe that the Famicom version of *Bomberman* is the one and only version of the game,' he admits.



Hudson's link

with NEC, which began with the PC Engine, has continued to flourish, and has just blossomed in the form of a new machine, the PC-FX, which is aimed at recapturing NEC's former prominent position in the Japanese videogames industry.

Games like *Bomberman* won't be appearing on the PC-FX, though, because of NEC directives on software development. Apparently, the company's intention is to concentrate solely on software based on popular anime series, so although it is claimed that the system is able to handle both sprite and polygon-based titles, the range of software will be heavily biased towards pre-generated animated footage.

This marketing strategy is perfectly illustrated by *Battle Heat*, a Fist Of The North Star-inspired fighting game which is scheduled for release at the same time as the machine. *Battle Heat* only conforms to the established beat 'em up formula at the beginning, in as much as each player gets to choose their fighter from a selection of eight. From then on, the action is turn-based. When a player has gained the initiative, he is free to unleash an attack from his character's repertoire of moves – rather like a traditional Japanese roleplaying game. The resulting animation – be it a successful hit, block or whatever – is immediately kicked in from CD, after which the recipient is able to return in kind.





NEC's unusual PC-FX games console was released on December 9 in Japan. Three games shipped at the same time



Although primarily a games machine, the PC-FX can also receive faxes and hook up to NEC's PC98 computers

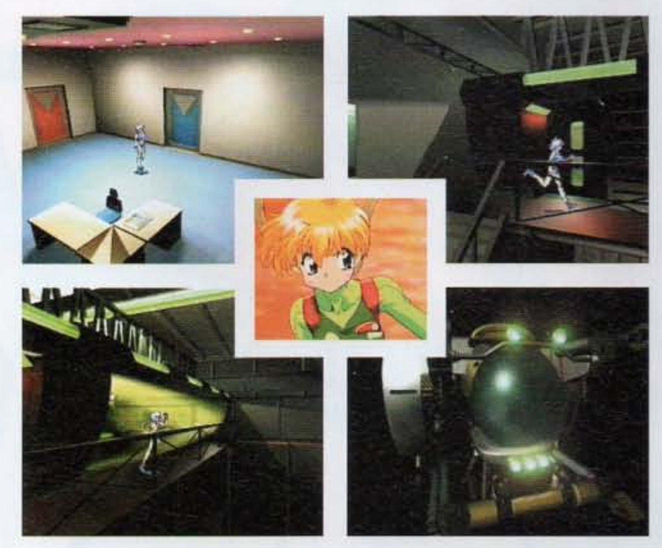
The game's theme, plot and characters were all designed by members of Hudson Soft's in-house team and then relayed to an external animation studio where the anime footage was created. This is fantastical action-crazed stuff featuring typically

The PC-FX is aimed at recapturing NEC's former prominent position in the Japanese videogames industry

Japanese camera angles, furious speed lines and dramatic pans.

The other project from Hudson Soft's PC-FX development arm is *Team Innocent*. Although it too comes armed with umpteen megabytes' worth of pre-rendered stills and footage, it also features traditional sprites, blending the two to create a space adventure with a very distinctive flavour.

With backgrounds rendered using Alias software on Silicon Graphics machines, *Team Innocent* is similar in style to Infogrames' *Alone In The Dark*

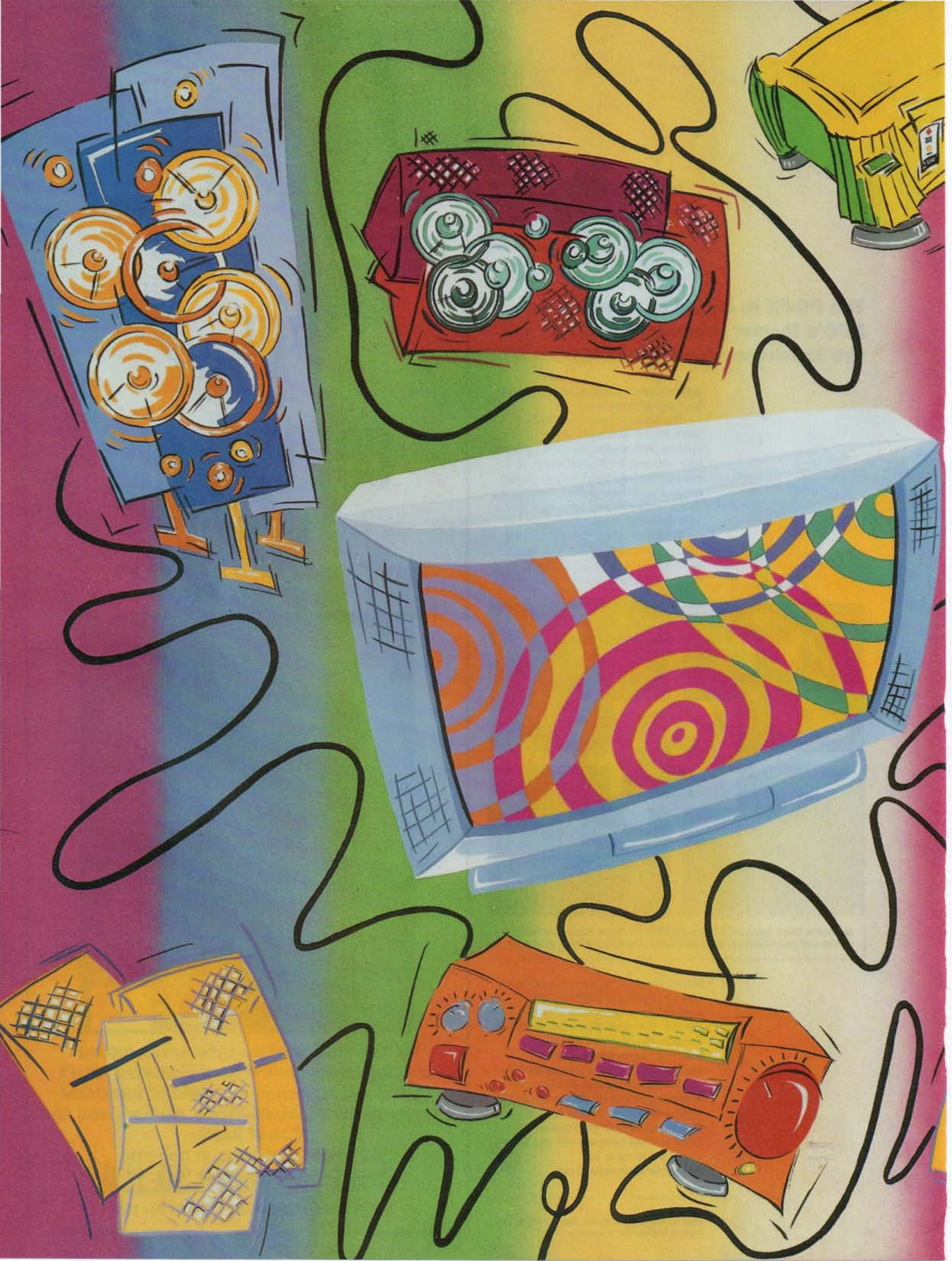


Hudson's *Team Innocent* for the PC-FX is a bizarre adventure mixing anime and pre-rendered video and stills. The video quality is superb

series. The PC-FX holds several views of each location in RAM and flips between them as the player moves around. The most impressive aspect of the title, though, is its stunning, fullscreen digital playback drive, courtesy of Hudson's custom hardware.

But, perhaps wisely, Hudson is not depending on the PC-FX for its future. With projects for the PlayStation, Saturn and 3DO in development, it looks as if the company will also have a strong presence in the next-generation mainstream. **E**

Edge wishes to thank **Taeko**, **Earl** and all at Hudson Soft for their hospitality.





For so long separate entities, television and hi-fi have now joined forces under the banner of 'home entertainment'. It's a phenomenon that videogames could benefit from

Over the last couple of years a revolution has been gathering pace, transforming people's attitudes towards the audiovisual experience and shaping the way they watch, and listen to, television. New terms have become commonplace: Dolby Pro-Logic, digital video, surround sound, widescreen. This is the language of home cinema.

It all began back in the mid '70s with the Star Wars movie and the advent of Dolby Spectral Recording (commonly known as Dolby

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Stereo). Dolby SR employs discrete audio channels to play separate sound effects from speakers placed to the side and behind the audience. Stereo sound (pioneered by Walt Disney's Fantasia) took a leap forward – the audience was literally surrounded by sound.

In 1974 Ray M Dolby and his team discovered a way of matrixing four audio channels on to the two optical soundtracks of 35mm film. The system debuted in 1975 with Ken Russell's Lisztomania, but wasn't to make a major impact until a year later, when Star Wars played to 46 Dolby Stereo-equipped theatres across the US.

Star Wars' multichannel Dolby stereo information made it intact to the video release – all that was needed to replicate the cinema sound was a decoder and separate speakers. The first incarnation of the system, dubbed Dolby Surround, split the soundtrack into three channels: left and right, plus rear effects (two speakers are used for a wider rear sound, although both units are fed the same signal).

While the early adopters and technofreaks are happy to play films from CD, Joe Average and his wife may not be so enthusiastic

Later improvements to the technology gave us Dolby Pro-Logic, in which enhanced steering circuitry enabled the Dolby signal to be decoded into four channels, with a centre dialogue signal supplementing left, right and rear. The central speaker usually takes the form of a magnetically shielded speaker sitting on top of the TV, effectively locking spoken dialogue to the screen image. It's a subtle effect, but one which stops those sitting to either side of the TV hearing speech biased towards the nearest speaker.

Dolby Surround is increasingly finding its way into TV transmissions (Star Trek: The Next Generation, The Simpsons, Cracker, Bad Influence, and so on), audio CDs and, more recently, videogames. Most hi-fi and electronics companies now manufacture Dolby Pro-Logic decoders and integrated audiovisual amplifiers. And current systems, such as those produced by Yamaha, support an eight-speaker setup incorporating left, centre, right and two rear effects speakers, plus two front effects speakers for wider stereo imaging and a subwoofer line output for settee-shaking bass.

As if this wasn't enough, the state of the art has recently been redefined by George Lucas. Having spent months creating subtle stereo and surround effects for his movies, he was distraught to find that many cinemas were poorly equipped to reproduce them.

He immediately gave Tomlinson Holman, one of Lucasfilm's technical engineers, the task of setting the specification for cinema sound. And, presumably in homage to his first theatrical release – THX 1138 – so began the Tomlinson Holman eXperiment certification program, which sets out standard criteria by which cinema sound equipment can be measured. THX-certified cinemas, such as the Empire in Leicester Square, London, are equipped to reproduce the film soundtrack exactly as it was meant to be heard. The THX standard has also been extended to home equipment (AV amps, speaker setups and LaserDisc players) and to LaserDisc duplication. Home THX is awesome, but it will destroy your bank balance.

With the advent of home cinema, LaserDisc is enjoying something of a renaissance in the UK. It is the best source of decodable digital sound and has a picture resolution far in excess of standard VHS.

First unveiled by Philips in 1972, the medium was initially called VLP – Video Long Play. However, it didn't go onsale until 1978, by which time it had been dubbed LaserVision. The 300mm-format disc stores both audio and video as analogue signals which, although less precise than digital, take up significantly less storage space. By the late '80s it had metamorphosed into LaserDisc and supported both analogue and digital soundtracks, although the video track remains analogue because of the vast number of megabytes needed to store digital signals. To date there are 4.7 million LaserDisc players in Japan and over a million in the US.

Though LD is old technology, it's still the standard system for home cinema fans, providing sound and picture quality that is superior to VHS or the newer Video CD, and will be until MPEG 2 becomes widely available. With the new THX-certified LDs, the format seems further ahead of Video CD than ever – as anyone who has seen and heard Aladdin or Jurassic Park on LaserDisc will testify.



Toshiba pioneered the 'home cinema' concept with a TV incorporating Dolby Pro-Logic decoding and surround speakers as an affordable package



Pioneer has stuck by LaserDisc, not only producing players – like its both-sides-play CLD-2850 (above) – but also distributing PAL discs into the UK. Sony and Philips also currently support the format

It is only the cost of LaserDiscs and players, and the relatively poor distribution of PAL software, that has prevented LaserDisc escaping the domain of high-end movie enthusiasts and entering the mass market.

Of course, the mass market is where Philips, with its Digital Video-branded CD-i system, has set its sights. But while the early adopters and technofreaks are happy to play films from CD, Joe Average and his wife may not be so enthusiastic. VHS, which continues to evolve, has such a vast foothold in homes across the northern hemisphere that the minor (some might say negligible) improvements to be had from Video CD playback do not seem particularly attractive. Almost 99% of the AV information is simply thrown away during the MPEG encoding process, resulting in a mosaic effect, jerky panning and merely adequate sound performance. True LaserDisc quality won't be achieved until affordable blue lasers and quad-density CDs become available. Pioneer, even with its allegiance to LaserDisc, is investing heavily in digital research and claims that this technology will not hit the high street for at least seven years.

One offshoot of the home cinema revolution is widescreen TV images – the result of film companies, keen to preserve the cinema ratio of movies on disc and tape, releasing widescreen versions of their films for home use.

Human eyes view scenes more easily in widescreen, which has less vertical latitude than horizontal, and so it seems only natural to produce widescreen films and videos – and televisions. But while the technoliterate have embraced the glories of Dolby Pro-Logic with open wallets, the battle to gain a foothold with widescreen is less advanced. A dearth of widescreen software means that 16:9-ratio TV sets are forced to unnaturally massage the image to fit the frame or to lose information from the top and bottom of the screen.

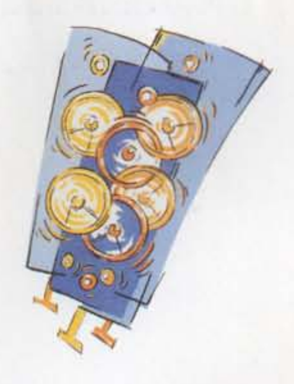
Of course, broadcasting widescreen images is the answer. Enter PALPlus. This is the agreed analogue solution to the problem of broadcasting widescreen pictures using established hardware without alienating the 120 million European 4:3-ratio TV users.

A normal PAL image employs 576 lines of the 625-line signal, with the spare 49 lines carrying information such as teletext. PALPlus reduces the 576-line picture to the 432 active lines used in a 'letterbox' image, but uses the remaining 144 lines to carry additional information which a PALPlus set can decode to reinstate the full 576-line widescreen picture on a widescreen TV.

However, PALPlus has met with resistance from those TV companies which dislike 'letterboxing' movies or want to go straight to a digital system. Only Channel 4 and Granada have agreed to show PALPlus programmes – mainly feature films. Channel 4's costs are being shared by Nokia, the main manufacturer of PALPlus widescreen TVs, while Granada's are partially shouldered by the EU.

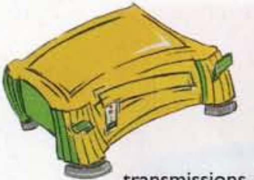
By the end of the year, over 500 hours of PALPlus will have been broadcast, unbeknownst to all but the few with PALPlus-capable TV sets. However, PALPlus is already doomed. Down in their R&D centre at Kingswood Warren, Surrey, BBC engineers are working on a digital TV system with a view to airing sometime in 1997.

With the blessing of the government, the BBC – in an unholy alliance with all manner of





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other broadcasters and manufacturers – is investigating several EU-backed projects, including HAMLET – simultaneous high-definition and normal-definition transmissions. The Beeb is also experimenting with a surround sound system that incorporates five full-bandwidth digital audio channels for separate left and right rear signals, rather than the mono surround channel of Pro-Logic.

But what has the advent of home cinema meant for the avid videogamer? For starters, NTSC-standard LaserDisc and VHS players have resulted in the majority of new TVs being able to show a fullscreen NTSC display via SCART, RGB, composite or even S-VHS inputs. No matter where you buy your games system, it will plug in and play, in full colour, with no rolling picture or letterboxing. And Namco's *Ridge Racer* will look a darn sight better on a 29-inch TV than on your mate's black-and-white portable.

CD-i leads the field, with titles like Virgin's *The 7th Guest* and Infogrames' *Chaos Control* proving that the ability is there

Soundwise, surround encoding has become *de rigeur* for CD games – especially on 3DO – and the gaming experience is enhanced no end by having police sirens closing in from behind, or by hearing a downed alien spaceship explode over your shoulder as you hurtle past.

For those on a limited budget, a complete solution is now available in the shape of home cinema TVs. Sets from Toshiba, Sony, Hitachi, Grundig, JVC and Panasonic have Pro-Logic decoding circuitry built in and an extra pair, or two, of speakers. With sets starting at £650, they represent an ideal way of dipping your toe into the Pro-Logic puddle. At the very least, a videogamer should plug the audio output of his or her console through an amp – the TV's weedy internal speaker just doesn't hack it.

Of course, Video CD – aka digital video – has yet to find a place in interactive entertainment. And while MPEG I may not satisfy movie aficionados, it's good enough to provide believable cinematic backgrounds for videogames. Certainly CD-i leads the field, with titles like Virgin's *The 7th Guest* and Infogrames' *Chaos Control* proving that the ability is there, even if the methodology requires more thought.

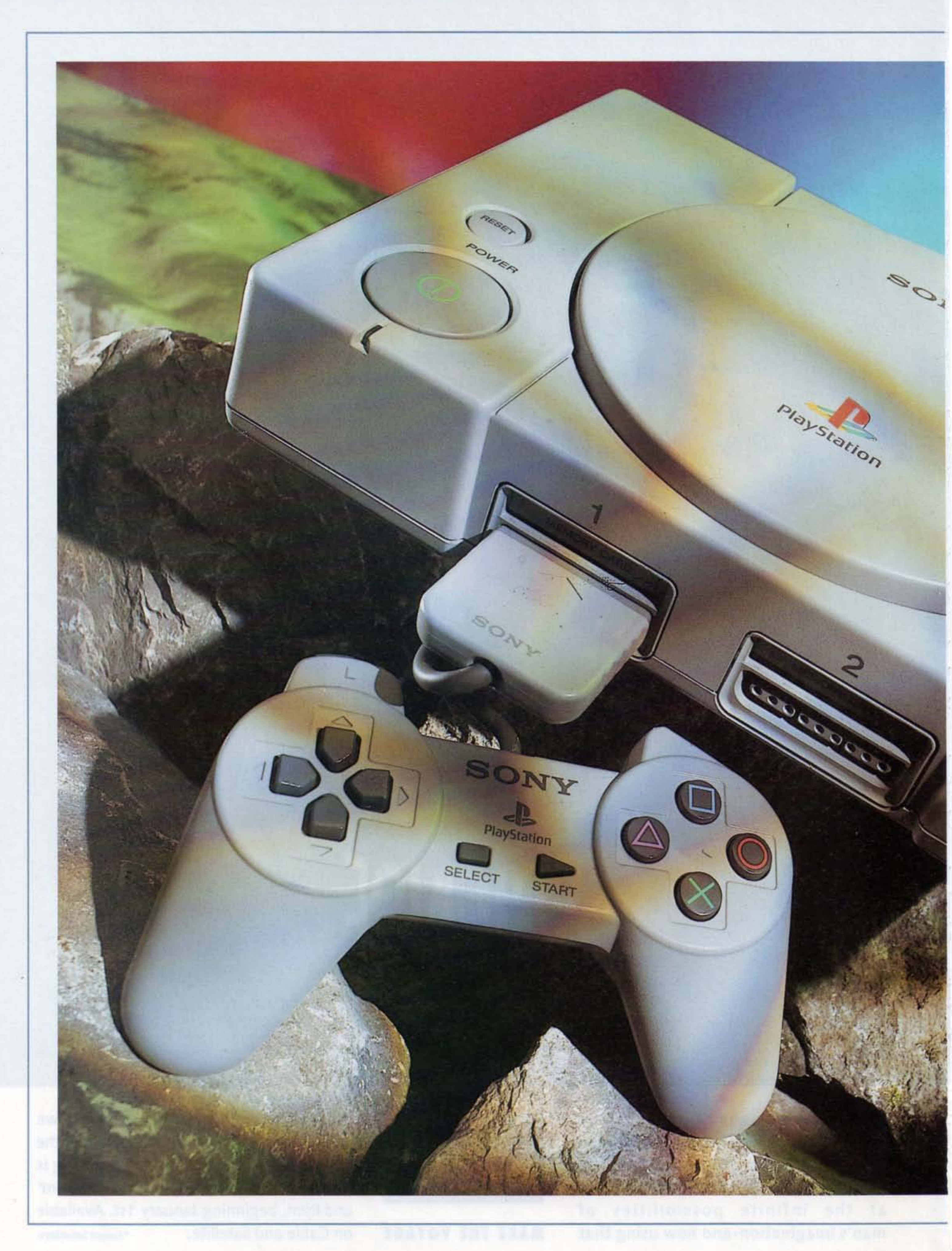
The problem is that video footage is not interactive. Today's technology isn't powerful enough to enable you to manipulate the AV stream – hell, CD-i has enough of a job just playing back MPEG video footage. Pioneer's upcoming LaserActive system has the same problem – while the high-quality video footage plays, the gamer can only interact with overlaid graphics. Unless we are to exist on a diet of *Mad Dog McCree* or *Dragon's Lair* variants, it's possible that the MPEG-based game is a dead end.

However, the arrival of a workable MPEG system is good news for video on demand and interactive TV systems. Conventional networks are incapable of bearing the strain of normal digital transmissions, but MPEG 2-compressed AV can be transmitted more efficiently, with decoders waiting in set-top boxes – as long as you don't already have a centre speaker on your TV. Indeed, a major (but curiously appealing) problem facing anyone wanting to board the home-entertainment bandwagon is just where to put all the gear…





Yamaha was one of the first companies to offer AV amps with Pro-Logic circuitry. Now there are few hi-fi manufacturers who do not have Pro-Logic decoders or AV amps on the market, including THX-branded units


RESET
POWER
PlayStation
1
SONY
2
SONY
PlayStation
SELECT
START



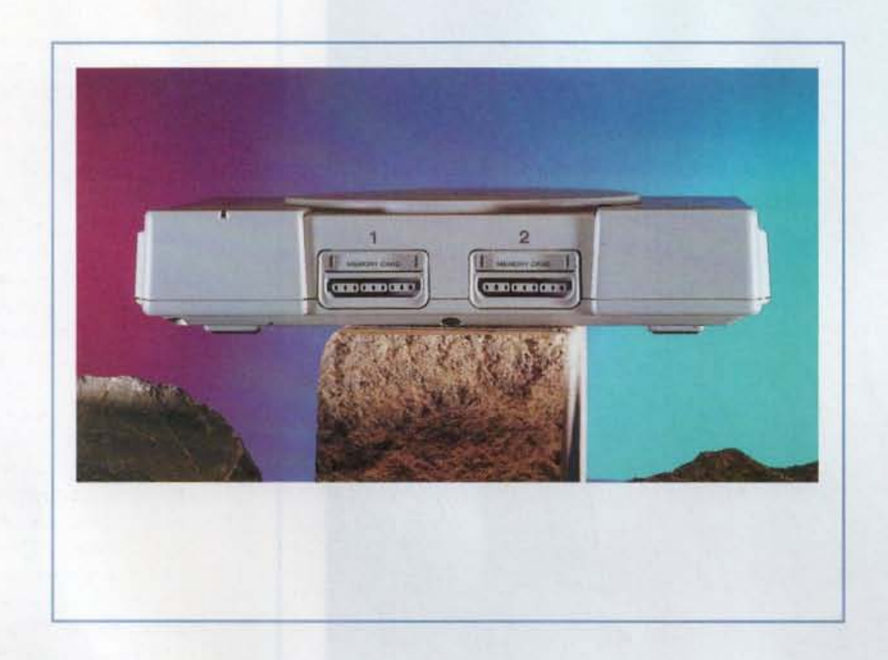
PlayStation

The wait is over. The PlayStation has been launched in Japan and Sony has joined the elite club of console manufacturers. But what does Sony know about videogames? How can it possibly compete with the likes of Nintendo? Edge weighs its chances of success

Sony's bid for power

It's early December in Tokyo. The Christmas buying season has started in earnest and The Land Of The Rising Sun is in the grip of its annual frenzy of consumerism. Swarms of fashion-conscious young Japanese pour in and out of expensive department stores, subway trains groan under the weight of weary shoppers, and the world's electronic goods Mecca, Akihabara, pulsates under a skyline of shimmering neon. In the midst of

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'We do recognise Sony as a major player. It's just that we're confident that we know videogames better than anyone, and we feel supremely confident that at every technical turn the Ultra 64 is a superior machine to the PlayStation and will offer a greater gaming experience'

Peter Main, Nintendo

this buying mania, Sony rolls out its single most important consumer product of the 1990s: the PlayStation.

The world's most powerful videogames system hit the shops on a mild December 3. The Japanese had been exposed to the machine in the weeks prior to the launch by a series of TV ads depicting brainwashed college students banging on desks and chanting the name of their long-awaited dream machine: 'PlayStation… PlayStation.' Stores built up consumer awareness with videos of forthcoming games. And, in the final stretch, playable machines appeared outside storefronts running the jewel in Sony's crown, *Ridge Racer*.

And yet, unlike Sega's big day two weeks earlier, the PlayStation was met with only moderate hysteria in the Japanese high street. Queues were far less impressive than the ones that had gathered to meet the Saturn, and there were few sell-outs for shops to brag about. For a company with no significant experience in the games industry, the launch of the PlayStation was undoubtedly a spectacular success, but the fact that Sony had a stronger software line-up, a better machine and an all-important price advantage was not reflected in the sales figures.

The PlayStation, of course, lacked one thing: *Virtua Fighter*. In the eyes of Japanese gamers, Sega's groundbreaking beat 'em up more than justified the price of the Saturn by itself. Ultimately, Sega's coin-op kudos proved to be more than a match for Sony.

The arrival of the PlayStation in Japan is the culmination of a long-standing campaign by Sony to gain a stake in the ever burgeoning videogames market. Until now it has failed to make any significant headway. Ever since its investment in the abortive MSX home computer standard – supported by manufacturers like Toshiba, Matsushita and Sharp – Sony's forays into the sector have not been great successes, and it has remained a bit player on the global videogames stage. Some observers suggested that the company was too big to be happy with just a piece of the market, and too inexperienced to know how to approach it.

As Nintendo's **Peter Main** puts it: 'They haven't actually done that much in the games market so they can't be judged just yet. What you can do is ask how they've done in music and movies, and the answer is not that well.'

One of the reasons for Sony's reluctance to launch an all-out assault on the videogames market was Nintendo. Sony became increasingly intimidated by the Kyoto giant during the most successful years of the Famicom (1985-88), and the company was further subdued by the arrival of the Game Boy in 1989, which saw Nintendo encroaching on Sony territory. Sony was so impressed with the design and performance of the low-cost handheld that its main R&D team working on consumer portables was apparently chastised by its manager on the basis that 'the Game Boy should have been a Sony product' (although it would undoubtedly have been called 'Gameman' if Sony had originated it). According to David's Sheff's definitive history of Nintendo, Game Over, one engineer was so ashamed that he actually left the company.

In 1988, though, Sony saw fit to embark on a mutually beneficial agreement with Nintendo. The deal was to develop a CD-ROM drive for the 16bit Super Famicom – a console that wasn't due on the market for another 18 months. This was a chance for Sony to get a grip on the market it had been eyeing for years. Nintendo wanted CD-ROM. Sony wanted market share. Thus two of the most successful and feared companies in the Japanese electronics industry joined forces.

The technology that was to bring them together was Sony's (and Philips') CD-ROM/XA, an extension of the CD-ROM format that interleaves compressed audio, visual and computer data (and allows both to be accessed simultaneously with the aid of extra hardware). However, Sony also had plans to develop another Nintendo-compatible machine, a self-contained entertainment system that would play both SFC cartridges and a new CD format designed and solely licensed by Sony. Called Super Disc, this proprietary format would also form the basis of Nintendo's own CD-ROM drive. And so the PlayStation was born.

Sony had seen a potential to create a new kind of videogame on CD-ROM by using its vast entertainment interests, which included Sony Music and Columbia Pictures. In fact, it was so confident of its new format that it planned to be the 'sole worldwide licensor of the Super Disc'.

Of course, such actions didn't endear Sony to Nintendo. As the PlayStation started to take shape, Nintendo found that it was becoming an accessory to the global ambitions of its partner. The rival electronics giant had Nintendo's market share firmly in its sights and was only a few steps away from starting to entice its licensees and customers away.

Nintendo's relationship with Sony had always been fraught with difficulties, though. NCL experienced problems when it enlisted the support of Sony's digital and audio R&D division to design a soundchip for the Super Famicom. After its completion (it was designed by Sony's hardware supremo Ken Kutaragi, the chief engineer who went on to create the chipset for the new PlayStation), Sony retained all rights for the programming of the chip, and then charged Nintendo excessive fees for access to information for its developers.

Although irritating, development hiccups were one thing Nintendo could handle. But faced with a problem that threatened its core business, it knew it needed to take drastic action. One month before the Chicago CES in 1991, Hiroshi Yamauchi, the chairman of Nintendo, instructed his son-in-law Minoru Arakawa and Howard Lincoln to travel to Philips'



© Ascii Corp





The PlayStation/SNES CD-ROM hybrid (artist's impression, top); Sony's SNES soundchips (middle); and NCL's Kyoto base

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'The PlayStation is definitely the sort of machine the market has been waiting for. It provides a huge technical leap forward even more apparent to the end-user than the jump between 8bit and 16bit. It's revolutionary rather than evolutionary'

Gary Bracey, Telstar

HQ in Eindhoven, Holland, to secure a deal that would allow Philips to develop a CD-ROM platform for the Super Nintendo. The deal also permitted the co-development of a bridge format that would allow compatibility between Philips' own CD-i platform and Nintendo's proposed CD-ROM games.

Meanwhile, Sony chose the first day of the 1991 Chicago CES to publicly announce the development of the PlayStation and cement its relationship with Nintendo. The news of the system was an immediate press sensation and was well received by an industry keen to usher in a new dawn of CD-ROM technology without writing off new cartridge systems like the SNES. But it was a futile exercise. On the second morning of the show, things went horribly wrong for Sony.

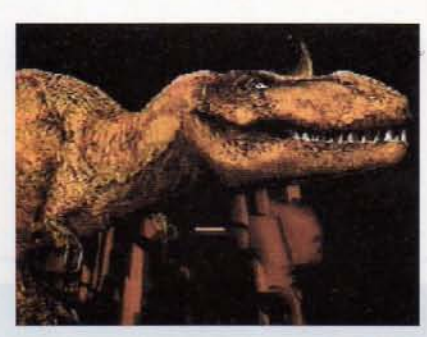
At 9am a press conference was held by Nintendo, attended by the industry figures and the world's specialist press. It was expected that Nintendo would divulge details of its alliance with Sony and its PlayStation. Instead, Howard Lincoln revealed to the assembled industry watchers that Nintendo had chosen to work with Philips.

Sony was enraged. The news wasn't entirely unexpected, though. Information about the deal had started to circulate within the company 48 hours previously, and the ageing chief executive, Norio Ohga, had acted immediately to stop it by telephoning Hiroshi Yamauchi directly at NCL. In David Sheff's book, Howard Lincoln reveals: 'There were tremendous efforts on a worldwide basis to stop that press conference from happening. They [Sony] gave up on us but they kept pressuring Philips.'

But, as Lincoln's CES announcement made patently clear, it was all in vain. All Sony could do was bite the bullet and soak up the humiliation.

For Sony to be snubbed in this way was a great shock to everyone concerned, not least to senior management in Sony's emerging games division. 'They stabbed us in the back,' says SEP boss **Olaf Olafsson** in Game Over. After a period of legal wrangling and much name-calling by Sony, Nintendo managed to extricate itself from the contract it had signed with Sony without suffering a penalty. But that wasn't the end of the matter.

Throughout 1991 and 1992, development of the PlayStation progressed on the general understanding that an agreement would be reached over the licensing of Nintendo CD software. At the end of 1992, Nintendo, Philips and Sony signed a deal whereby Sony's PlayStation would be able to run SNES CD-ROMs but left Nintendo with the sole rights to all its games, including CDs.





The realtime dinosaur demo (top) became a benchmark of PlayStation performance. SCE's Tokyo HQ is located in Minato-Ku

But the PlayStation never made it out of Sony's factories and onto the shelves. The hardware reached the prototype stage, and the software even started to be produced – one 'absolutely awesome' game was apparently close to completion – but after a tortuous round of negotiation and litigation with Nintendo the project was scrapped. To this day, around 200 original PlayStation units lie in Sony offices around the world collecting dust.

But no-one really expected Sony to give up after it had come so far. And indeed, it simply went back to the drawing board and continued the project alone.

When the PS-X, or PlayStation-X, surfaced in late 1993, the biggest surprise was that the machine would not embrace the multimedia aspirations of The 3DO Company and Philips. Sony had visited 3DO when Trip Hawkins was selling his 3DO technology to hardware manufacturers, and its engineers came away from the San Mateo offices distinctly unimpressed, maintaining that the technology was 'nothing new'. Instead, Sony took a confident stride towards creating its own thoroughbred games machine. That move now appears to have paid off.

Perhaps the most crucial episode in the whole PlayStation saga is the establishment of a global network of supporters. Sony learned from the mistakes made by 3DO and Atari and realised early on that it would not have a place in the market without good software support. Since late last year the company has set about recruiting prominent developers throughout the world. Few have refused. Naturally, those with a strong allegiance to Nintendo offered a polite, 'Thanks but no thanks', but some did make the switch from developing for rival hardware. *Mortal Kombat III* was one game that Nintendo thought it had in the bag for the Ultra 64, until Sony's PlayStation hardware arrived at Williams. Now the game is due to surface in the arcades using Sony's technology, and a portover will appear a few months later on the home system.

For a company with virtually no past record in the games hardware field, Sony has done a remarkable job in persuading developers to climb aboard. Since the announcement of the machine, over 250 companies worldwide have signed up and some 700 development stations have been shipped out.

Even Nintendo acknowledges the scale of Sony's success. 'We're well aware of the hype surrounding the PlayStation,' says Peter Main, 'and I think that Sony is doing a great PR job at the moment. Thankfully, it seems to be at the expense of the 32X and Saturn, which people now seem to be sceptical about.'

Demonstrations of Sony's technology to developers have done more to convince the industry of the machine's benefits than any number of marketing executives could have. Konami UK's **Pete Stone** recalls his first experience of the hardware: 'Sony showed us a demo back in January. It was running at only half-speed but even then we came out of that meeting with our jaws on the floor. We've since been hugely impressed with the sheer processing capabilities of the machine and the routines that are built into the hardware.'

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'The PlayStation is very strong, certainly in comparison with the Saturn, but Sony has absolutely no experience in this market and the games market really is like no other. You can't just come in and buy market share. You have to build it'

Darryl Still, Atari

The involvement of coin-op companies like Konami and Namco right from the start has been one of the most important factors in the evolution of Sony's hardware and software. As well as encouraging the translation of big coin-op hits like Namco's *Ridge Racer* and Konami's *Ultimate Parodius*, Sony knew it would be a smart move to use the PlayStation as a breeding ground for arcade products – the rich arcade heritage of both companies was something that it would benefit immensely from. 'We're one of Sony's closest partners,' claims Pete Stone. 'We've got 12 titles in development for the PlayStation, and we're also developing coin-op games using the Sony chipset.'

Although the quality of Sony's technology has never been in doubt, the company does have one major problem in that it lacks an established internal games division for churining out quality titles. Sony Computer Entertainment's in-house muscle is actually a collection of external developers that have worked on a range of titles for release during the first six months, including the launch racer *Motor Toon GP* (from thirdparty team Bandit) and the shoot 'em up *Philosoma*. Without its own 'Sonic Team', or a game design guru like Miyamoto, many feel that Sony will be relying too heavily on thirdparty product of varying quality. And this view is largely confirmed by the launch line-up. Leading the pack is Namco's excellent *Ridge Racer*, while a glut of mahjong and pachinko games bring up the rear.

Something else that doesn't inspire confidence is Sony's own track record in game publishing. Since its establishment in 1991, Sony Electronic Publishing (SEP) has seen its reputation plummet with the release of sub-standard cartridge games like *Last Action Hero* and *Cliffhanger*.

Many people also rightfully questioned Sony's acquisition of Psygnosis in 1993 for £30 million. The question on most people's lips was: Why was a company with so few quality games to its name placed in such high esteem by Sony? Some maintain that it was the company's technical expertise that Sony was interested in, while others claim that it just didn't understand the market.

'Sony couldn't see the wood for the trees,' one developer told **Edge**. 'High-paid Sony execs were seduced by this company that could make videogames that looked like computer movies. That fact that the games also played like movies didn't seem to ring any alarm bells.'

But of course, the most painful irony of all is that Psygnosis' most successful game and the company's flagship, *Lemmings*, was designed by Scottish thirdparty developers DMA.





Sony chic: the blue debugging station (above). Namco has played a vital role in the PlayStation's evolution (Tokyo HQ, top)

SCE's slogan, 'If it's not realtime, it's not a game', sits uncomfortably with the image Psygnosis has acquired. However, in its defence, Psygnosis claims that with the PlayStation it now has a machine that can handle highly sophisticated graphics in realtime, and that the machine will mark a turning point in its game design.

One thing that makes this more credible is the streamlined development process that Sony seems keen for its developers to adopt. Custom 3D libraries such as those in RenderMorphics' *Reality Lab* – rumoured to be a part of the Sony machinery soon – will make producing ultrafast 3D a breeze. This will minimise the need for extensive low-level programming and allow the game designer more time and freedom to practise his art. The extensive libraries provided in the PlayStation hardware itself have been also well received in the development community. A prominent US developer recently told **Edge**: 'We got the development kit, started fiddling around, and in two weeks had something like *Rad Mobile* up and running.'

Sony's decision to go with CD-ROM technology has had mixed reactions. Certainly, from the titles **Edge** has seen, the PlayStation CD-ROM technology has been designed to deliver games with the minimum of fuss, and wait times are negligible. But prejudice against CD-ROM is still strong in the industry.

'With CD, even a double-speed drive isn't fast enough to deliver what gamesplayers are used to,' admits Vivid Images' **Mev Dinc**. 'Having said that, we just have to accept those limitations and use our skills to write great games for the PlayStation. I'm sure we will, because, CD-ROM aside, it's a brilliant machine.'

Konami's Pete Stone agrees: 'Software will have to be written and configured thoughtfully to get around that problem and what we may see is a slightly different style of game emerge, one that isn't particularly reliant on speed.'

Sony's decision to go with CD-ROM technology is undeniably the right one, though, for one specific reason. The most significant effect that Sony has had on the market – even before the arrival of the PlayStation – is its persuasion of thirdparty developers to charge up to 40% less for their PlayStation games than they would for cartridge software. At launch, most software for the PlayStation cost under ¥6000 (£36). In contrast, most new SFC games still retail for almost ¥10,000 (£60).

Now the PlayStation is available in Japan, Sony's attention will inevitably turn towards the global market. The company maintains that the machine will be released in the US and Europe in September 1995. Very few people (with the exception of Sega, Nintendo, 3DO and Atari, of course) will be sorry to see it arrive.

'It's certainly good to see a company the size of Sony entering the market,' says **Fergus McGovern**, head of Probe Software. 'Their past hardware successes do suggest that they know what they're doing – although when they've entered new markets they've had problems, such as writing off billions of dollars in Hollywood.'

But the point is surely that Sony *can* write off billions of dollars. This is a company with immense resources, and if an organisation as large and powerful as Sony is determined to do something, it usually succeeds. The videogames industry may never be the same again. E

Ridge Racer Virtua Fighter **Transport Tycoon** Rise Of The Robots
The King Of Fighters Creature Shock **Super Street Fighter II X** Samurai Shodown

Testscreen

68


79


86


80


84


90




72




76

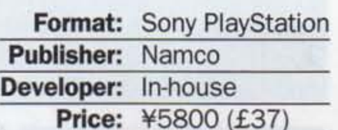
Ridge Racer



The range of pre-race options added by Namco gives the home version greater longevity (top left). In the city, a lorry crosses the bridge, as in the coin-op (top right). A video wall displays a demo of *Galaxians* – *a* token inclusion from the *Ridge Racer 2* coin-op



Ridge Racer looks amazing throughout, but there's occasionally slight slowdown when your opponents' cars or the helicopter appear close up



Format:	Sony PlayStation
Publisher:	Namco
Developer:	In-house
Price:	¥5800 (£37)
Release:	Out now (Japan)

No entertainment medium changes as fast as videogames. The boundaries of the art are constantly being pushed further back, with consumers' expectations changing accordingly. Often a single product is responsible for a major leap forward. *Ridge Racer* is an honourable member of that elite group. Just as *Super Mario Bros* redefined the platform genre and *Street Fighter II* revolutionised the beat 'em up, so Namco's *Ridge Racer* coin-op has taken the racing game into a new dimension.

Before *Ridge Racer*, the leading arcade racer was *Virtua Racing*. But now Sega's game simply isn't jaw-dropping enough to satisfy appetites whetted by Namco's overwhelming texture-mapped graphics. *Ridge Racer* has opened up a whole new world of computer-generated realism which puts plain, flat-shaded polygons – even 180,000 of them per second – firmly in the shade. And now it looks set to repeat that success in the domestic market. Because, as many suspected (but just as many doubted), PlayStation *Ridge Racer* is a nigh-faultless conversion. Which is pretty impressive when you think that it's the fruit of just six months' labour, on a machine barely in its infancy.



Unlike in the arcade, an external view gives you a chance to view other cars as they pass



Sending these barriers flying is just as satisfying as it was in the arcade version







Boot-up (a paltry 10 secs) is made endurable by an arcade-perfect game of *Galaxians* (top). The range of cars means you can pick one that suits you (middle)









Using the outside view is far harder than controlling the car from inside the cockpit – mainly because the sensitivity of the steering hasn't been adjusted. Leaving the tunnel brings the bridge and helicopter into view

Ramming your opponents is always good for a laugh (top). The cars slide realistically round corners (middle) and provide stunning views (above)

Ridge Racer manages to deliver the richest, most breathtaking 3D graphics seen outside an arcade. The colour resolution of the textures is lower than in the coin-op, and some of the finer detail has been lost, but what more than makes up for these drawbacks is the exceptional frame rate. The game hurtles along at well over 30fps, and retains almost all of the grace and beauty of the coin-op. Occasionally the action jolts slightly when the external perspective is selected and the screen is packed with cars, but this is a rare occurrence.

Unusually for a coin-op driving game, *Ridge Racer* is more a simulation than an out-and-out racer. The arcade machine was a serious attempt at simulating the driving experience (only the second after Atari's clumsy *Hard Drivin'*), to the extent that a full clutch and gearbox were included, and the deluxe coin-op model even featured a real Mazda MX-5, minus engine. It was this attention to detail that won it many admirers beyond the speed-freak fraternity.

Ridge Racer's main failing has always been its lack of different courses. Although this

Continued



Here, the replay camera tracks your car's progress at breakneck speed round a bend



Some of the texture mapping is exquisite. Namco isn't afraid of promoting its classics (above)











At the end of each race you're treated to a playback of the last lap. 1 A side view tracks your approach to a dip. 2 The realtime shading never fails to amaze. 3 Take off. 4 Flying past a *Cybersled* poster at 200kph. 5 The front wheels hit the tarmac first, making the entire car shudder

deficiency can't be ignored, most players will regard it as far less important than the game's positive aspects. The fact is that *Ridge Racer* is probably the first game of its type to deliver a racing environment which looks truly convincing from inside the car. Electronic Arts' *The Need For Speed* (**Edge** 16) is great from outside, but get behind the wheel and memories of *Test Drive* on the Amiga come flooding back. In *Ridge Racer* you don't have to suffer a chugging frame rate and a road plotted to only a few feet in front of you. Here, the track unravels beautifully into the distance, giving you ample time to respond. And Namco has even thrown in an extra external view to provide a bit of variety (as well as satisfy *Virtua Racing* fans).

However, anyone looking to *Ridge Racer* for a lasting challenge is likely to be disappointed. The game is relatively easy to finish, although Namco has included a choice of four cars (12, if you shoot all the Galaxians on loading), each with different handling characteristics. Given the popularity of time trial options in classic SNES racers like *F-Zero* and *Super Mario Kart*, it will be interesting to see how *Ridge Racer*'s time-trial element boosts its longterm appeal.

After its half-year journey onto the PlayStation, *Ridge Racer* has managed to fulfil almost all expectations. (To satisfy those who demand a little bit more, Namco maintains that the game also has a few hidden surprises for players to discover.) This achievement is all the more remarkable when you consider the price of the game in Japan – a mere £37. From the brief but perfect game of *Galaxians* that you can play while the game boots up, to the dazzling graphics and arcade-perfect music and speech, *Ridge Racer* is the killer app that Namco – and Sony – can be proud of. And this is just the beginning...

Edge rating: **Nine** out of **ten**



Overhead view



There's a splendid variety of sweeping *Virtua Racing*-style views during action replays. The texture-mapped scenery means that sometimes all you want to do is admire the view

Continued next page

The tunnels



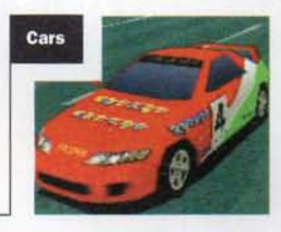






The tunnels were always one of the most impressive features in *Ridge Racer* and this version is no different. Approaching the mouth (top); tailgating a rival (top right); a gap in the tunnel wall approaches (right)

Cars





REPLAY





Of the 12 cars, the Ryukyu (top left) has good handling, the green Solvalou (top right) has fast acceleration, the pink Mappy (above) grips well, and the Bosconian (right) is a good all-rounder

The **course**

RR is a circuit-based game which pits you against five computer-controlled cars. From the starting grid in the heart of the city, the track breaks out into the city's outskirts, passes through a long tunnel and climbs up to a mountain pass. After crossing a suspension bridge, you drop down onto a beach-fringed stretch then back into mountainous terrain before a Main Street USA section. Another tunnel precedes the Time Trial route break – a diversion where the tracks bears left and up through a winding section flanked by mountains and roadworks. Best lap times can be stored on the PlayStation's superb memory card.

Virtua Fighter

Format:	Saturn
Publisher:	Sega
Developer:	AM2
Price:	¥7800 (£50)
Release:	Out now (Japan)







After each round in *Virtua Fighter* there's a short replay of the closing seconds of the action, showing the last moves from a different angle



***Virtua Fighter*'s attract mode and post-fight replays give you the chance to admire the superbly designed and animated characters**

Not since the market-shaking *Sonic* has Sega had so much depending on the success of one game. The launches of the Mega CD and the 32X were both just sideshows compared to the launch of the Saturn – the first next-generation machine from one of the big players in the videogames field. As the lukewarm receptions faced by the 3DO, CD-i, CD32 and Jaguar have proved, new hardware needs great software to sell it, so it's no exaggeration to say that *Virtua Fighter* is Sega's most important release for years.

Sega entrusted the Saturn conversion of *Virtua Fighter* to the game's original developers, AM2 (Sega's biggest arcade division). It's easy to see why. Saturn *Virtua Fighter* has all the pulling power of the arcade version, including the swooping, gliding game camera, the stylish polygon characters, the totally convincing animation and the compulsive gameplay.

The first thing that strikes you about *Virtua Fighter* is its graphics. They were impressive enough in the original, but on the Saturn, under the kind of intense scrutiny you can never give a game in the arcades, they emerge as simply astounding.

Although the characters (which are all made up of around 1200 polygons) look good in static screenshots, it's the superb animation that brings them to life. The full roster of arcade moves is included in the Saturn version, and every movement is realistically animated and weighted. For instance, Pai, the fastest character, flicks out quick punches that make the heads of opponents snap back. Her 'lightweight' close attacks are also delightfully choreographed – she grabs an opponent and trips them over her outstretched leg or twists their wrist and forces them to the floor.

Conversely, wrestler Jeffrey has several lumbering holds and throws. He moves in, grapples with a character, struggles to hoist them onto his shoulders and then slams them to the ground. It all takes a satisfying few seconds to execute and, in a real show-off touch, Jeffrey even takes time to adjust his hold on an opponent in his arms.

Virtua Fighter's 3D characters have a presence that 2D sprites just can't match.







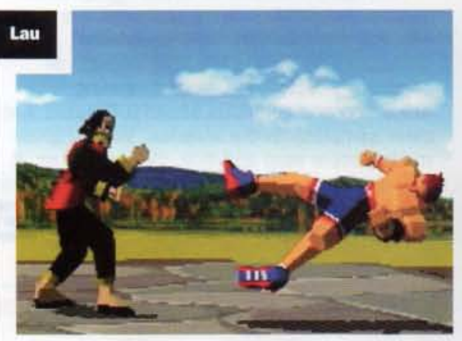
A selection of *Virtua Fighter*'s special moves (left to right): Jeffrey picks up another Jeffrey by the nose – press down and punch when in close. Sarah takes out Wolf with a clothesline move – press forwards, forwards then punch. Lau hoists Kage over his shoulders and slams him into the ground – press back, then forwards, then punch when close

The characters really do seem 'alive', whether they're throwing a punch, unleashing a special move or reeling from a blow.

Of course, the action wouldn't be the same without the fluid game camera, which pans about the two fighters, zooming in and out as they move around the arena and occasionally cutting to a new angle. The camera always maintains a position which doesn't

Continued next page

Lau









When any fighter knocks an opponent to the ground he can jump in and attack them while they're down. Here, Lau floors Wolf with a punch and (by pressing up and B) leaps in feet first, stomping on his stomach and causing a whole load of damage. (Press B twice while Lau is in the air and he'll jump on his opponent a second time)

disadvantage either player. Only in replays does it switch to more unusual angles (which, annoyingly, often prevent you seeing your finishing moves again).

For all the game's technical innovations, there's an elegant simplicity about *Virtua Fighter*. Unlike Takara's PlayStation title *Toshinden*, *Virtua Fighter* is basically a 2D beat 'em up with 3D graphics. The characters move on a single axis, with only throws and falls sending them to different parts of the arena. Just like in sprite-based games, they can't circle about each other or attack from the sides (taking them from behind, however, is encouraged).

All the moves are instinctive and the characters are a well-balanced bunch, offering a choice of power, speed or agility, plenty of possible combos and rewarding special attacks. And if you beat the game in oneplayer mode, you face a bonus character, Dural, and bring up a new play option – Ranking mode.

However, in stark contrast to, say, *Street Fighter II*, everything is controlled with just three buttons: punch: kick and guard. This doesn't compromise the gameplay, though. In fact, it amplifies it. Mastering all the characters' moves – all have at least ten and most have close to 20 – requires less thumb pad dexterity and more button work. The combat is swift, giving the game a steep learning curve which makes it a significant longterm challenge.

The game has just one minor failing – the fact that polygons (which are effectively distorted sprites on the Saturn) occasionally disappear and characters break up in certain action replay views. On the other hand, CD access time is commendably quick and difficulty levels, time limits and controls are all adjustable to suit personal taste.

The Saturn version of *Virtua Fighter* is an exceptional game in many respects. It's arguably the first *true* 'next generation' console game, fusing the best aspects of combat gameplay with groundbreaking animation and gorgeous sound (CD music and clear samples). In the arcades, *Virtua Fighter* made people stop and look. On the Saturn, it will make many people stop, look at their bank balance and then fork out for Sega's new machine. Over to you, Sony.

Edge rating: **Nine** out of **ten**



The character selection screen (top). Kage forces Jacky out of the arena to win by 'Ring Out' (above)



Beat all eight characters and you face bonus character Dural, a metallic polygon woman

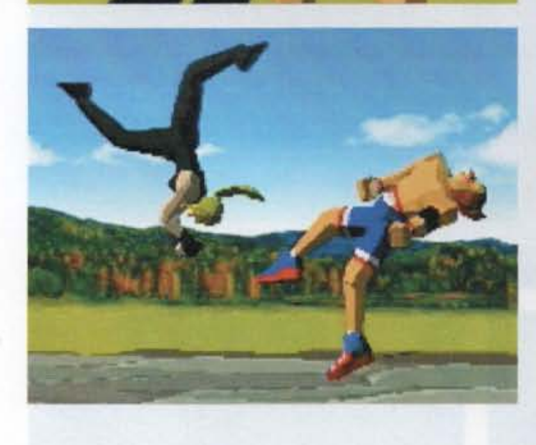
Wolf





All the characters in *Virtua Fighter* have their share of great-looking special moves, but the most spectacular is Wolf's spinning throw. Get in close, quickly do a semi-circle of the bottom of the pad towards your opponent and press punch. Wolf then steps in, grabs his opponent by the legs, spins them around and tosses them across the arena









Special moves

Each of the eight *Virtua Fighter* characters has a variety of special moves. Wrestler Wolf has the fewest with just ten – but they're mostly powerful throws and forearm or shoulder charges. Siblings Jacky and Sarah share the same controls and some of the same moves – each has a total of 21. All the characters have throws and flying attacks to hit a fighter who is lying stunned on the ground. And, surprisingly, all the moves are executed with just three buttons – punch, kick and guard – plus the directional pad. The more complex special moves trade speed and ease of use for sheer power.

Transport Tycoon

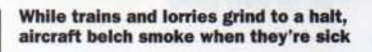
Format: PC
Publisher: Microprose
Developer: Chris Sawyer
Price: £45
Release: Out now

The sequel to Sid Meier's mega-selling rolling-stock romp *Railroad Tycoon*, Chris Sawyer's *Transport Tycoon* uses the huge RAM and high clock speeds of today's powerful PCs to swell the strategy sim to truly immense proportions.

As with *Railroad Tycoon*, your job is to create a transport infrastructure and shuttle all manner of cargo around the map in pursuit of financial gain, at the expense of other companies trying to do the same (you can choose to play against up to seven competing companies). This time, however, you can go off the rails and into road, air and sea freight.

The money-grubbing takes place in an isometric landscape that can be set to various levels of geographical hindrance. The game begins at the tail-end of the steam age, around 1930 and lasts for around 100 years. The idea is to forge links between towns and transport passengers and cargo by the most lucrative means possible. As the money rolls





While trains and lorries grind to a halt, aircraft belch smoke when they're sick





As time progresses, you can build big airports to cater for very profitable Boeing 737s and Airbuses (top), while the game automatically keeps the people amused by building recreation centres (bottom)









Icons with fairly obvious functions run along the top of the main screen, while more information on a specific object can be had from just clicking on it (top). Here we're just about to make a killing by selling off a trainload of steel

in you can buy more vehicles and build more depots, roads, docks, railways and airports.

Your task is hampered by things like other transport outfits building all over the land you had your eye on and truculent local authorities opposing your every move. Add difficult terrain, vehicles breaking down, and industrial and agricultural sites going bust and it soon becomes a major problem just keeping things on an even keel.

Thankfully, the game's interface is pretty intuitive. Icons offer charts showing how you and everybody else is doing and give you access to all the building/demolishing functions. Clicking on a town, depot or vehicle prompts a box to appear which gives stats on what it's about and how you can affect it.

Where *Transport Tycoon* scores over other sims is in its sheer detail and scope. Flatten some land and the grass grows back after a while. Plant some trees and they grow over the years. Vehicles get rickety and depreciate. Aircraft buzz around and trains chug along at realistic speeds. Even the style of buildings that go up as a community starts to expand reflects the architecture of the age. It's all very slick and fabulously distracting.

As the game progresses, things get very complicated. There's just so much to do at any one time that it becomes hard to keep up. And with so much happening, the PC really starts to wheeze. An industrious budding tycoon can expect things to get clunky around 40 years in, but that's when you're pushing the game's limit of vehicles and loading stations. The trick is to work within those limits – forget your earlier building frenzy and go for the most profitable configuration.

It's clear that *Railroad Tycoon* was a mere rehearsal. *Transport Tycoon* takes open-ended strategy games a giant step further. It's totally non-linear, incredibly flexible, superbly detailed and utterly riveting.





Zooming in and out (top, inset and bottom) helps you keep track of the overall plot. And just look at those wonderful graphics



***TT* is a very busy game, so graphs and balance sheets are available which enable you to pinpoint exactly where you're making money and where you're losing it**

Edge rating: **Eight** out of **ten**

Rise Of The Robots

Format:	PC CD-ROM
Publisher:	Mirage
Developer:	In-house
Price:	£50
Release:	Out now (UK)

There was a time when the only thing people worried about was the game. What does it play like? Is it any good? However, the halcyon days of the software biz as a cottage industry are now behind us, replaced by today's fast-moving 'interactive entertainment' business.

As game developers and publishers attempt to cross over into massmarket media and appeal to a more mature audience, the simple qualities and quirks that have characterised good videogames for two decades are disappearing. The race is on to perfect a new kind of televisual entertainment and, in the rush, all the innocence is being lost. *Rise Of The Robots* is one of the most damning examples to date – a triumph of style over content.



On paper it seems like a software publisher's dream come true: an aggressive one-on-one beat 'em up in the successful *Street Fighter II/Mortal Kombat* mould, coupled with the kind of photorealistic imagery that leaves window shoppers agog. It all adds up to a lot of hype, and *Rise* has set new standards in pre-launch publicity. Ah, but there's the problem. People expect an end product which justifies this amount of hype, but the reality of *Rise* falls way short of its carefully prepared image.

On the face of it, things seem fine. The lovingly rendered fighters (seven in all, each an original and attractive design) move as well as they look, the sound effects are satisfyingly meaty and metallic, and it's all wrapped up in some exquisite presentation and graphical gloss. But, surprise surprise, problems arise when you begin to play.

Modern-day beat 'em up aficionados recognise the qualities that make classics like *Street Fighter II* and *Mortal Kombat II* so playable: good characters, fast and frenetic action with a wide variety of moves and, most importantly, the ability to learn and improve your game through the use of advanced techniques. Astoundingly, none of these qualities are evident in *Rise*.

The combatants are slow and often clumsy, and their range of moves is limited. There are no missile attacks and the fighters can't even turn around to face the other way, so they can't jump over each other or cross over at all, which eliminates a wide range of techniques and gameplay possibilities.



The combat in *Rise* is terrible. You're sent flying again (top). The Supervisor morphs during bouts (above)

There are more gameplay shortfalls in the form of inadequate controls. Instead of the hard/medium/soft attacks that make *SFII* and *MK* quick and instinctive, *Rise* players have to contend with a tiresome 'power-up' bar which means you have to hold down the fire button and wait to execute a strong attack, and all the fluidity that's part and parcel of any good chop-socky game has been tragically lost.

But *Rise's* inability to copy the qualities of games like *SFII* and *MK* isn't the issue – it's entitled to its own style, after all. The real problem is that it's just so unsatisfying and frustrating to play. Lack of variety is also a major problem. Good beat 'em ups succeed in part by providing a mix of characters. In *Rise,* the player can only 'be' the cyborg in oneplayer mode, while in the twoplayer game there are some limited combinations, but only with the aid of a cheat mode.

Rise Of The Robots is truly awful. It's doubtful that the quality of the game was ever much of a consideration. But then, that's hardly the point any more, is it?

Edge rating: **Two** out of **ten**

Your constipated cyborg hobbles across the screen (top). The backgrounds are pretty (above)



***Rise* will eventually be released on 22 different platforms. The CD32 version (above) is already available**

The King Of Fighters '94

Format:	Neo-Geo CD
Publisher:	SNK
Developer:	In-house
Price:	£50
Release :	Out now



The *Ikari Warriors* boys' stage, Korea, is set against the backdrop of a crashed helicopter and a troupe of bewildered natives. Detail like this is typical of the game's graphical excellence



Andy Bogard's rush attack (top) remains unchanged. One of the game's lighter moments is provided by Lucky's basketball projectile (above)

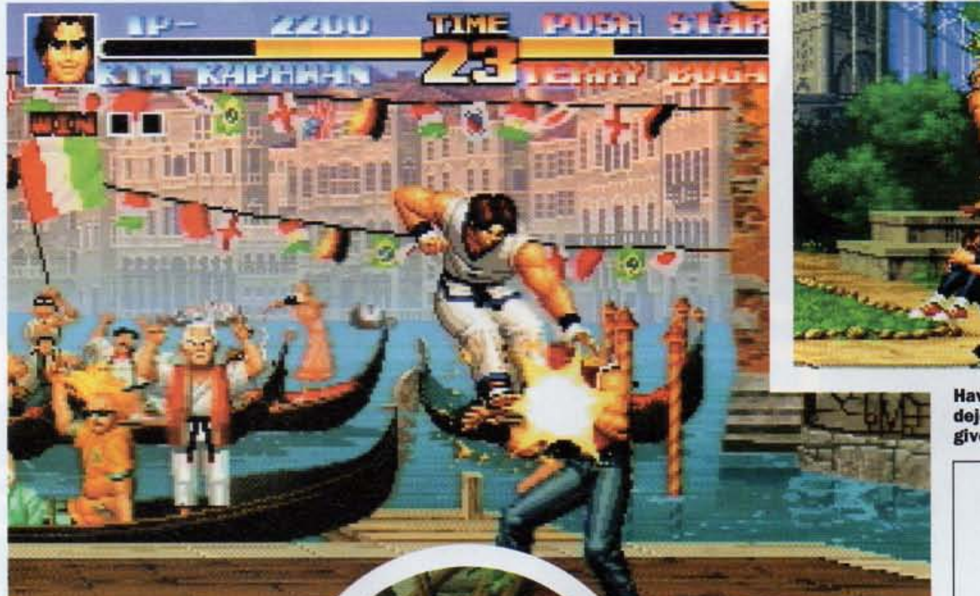
While other developers busy themselves cloning *Street Fighter II's* legendary playability, SNK is continuing to further refine its own beat 'em up engine, as initially demonstrated in *Fatal Fury*. And with good reason: the last instalment of the series, *Fatal Fury Special*, was an outstanding game and a perfect demonstration of SNK's in-house design reserves.

Now *The King Of Fighters '94* is available on CD and it's an even better game than its predecessors. Bringing together a selection of established characters from *Fatal Fury 2*, *Art Of Fighting* and, somewhat bizarrely, *Ikari Warriors*, the game is based on a 'team' concept. There are 24 fighters in total, divided into groups of three. The membership of each team depends on prior association – the Bogard brothers and Joe Higashi make up the *'Fatal Fury'* Trio, for example.

The appearance and abilities of the characters are as varied as anyone could hope for. All but one of them has three Super Attacks (special moves) and these, coupled with the 'rage gauge'-released Lethal Attacks, make for formidable gameplay. And that



Holding A, B and C mid-bout builds your fighter's 'rage gauge' and forces some bizarre behaviour



The postcard-worthy sights of Venice are the backdrop to a rumble between these two ex-*Fatal Fury* stars

Dead leaves (inset) are scuffed up from the forest floor in the midst of rough and tumble. A neat touch

Having lost her bout, Yuri Sakazaki sits dejectedly in the background as King gives her best shot for their team

variety is, of course, a key ingredient of the game's appeal. Even when you've played it solidly for days, *King of Fighters* offers plenty of opportunities to practise the moves of the characters and learn extra combos.

The game is based on the familiar *Fatal Fury* gameplay framework, with the main difference being a new dodge move that temporarily pushes your character into the background, out of harm's way. At the outset this appears to be a somewhat contrived attempt to make the gameplay appear more novel than it actually is, but keep at it and you'll discover that it finds a natural place in your fighting repertoire.

Restrictions imposed by the CD are very much in evidence, with grinding delays between character selection and combat marring an otherwise silken front end. But the advantages provided by the format outweigh such trivial annoyances. The main asset is the significantly improved music – *The King Of Fighters '94* is a seriously listenable-to game. From Italy to England, the stage soundtracks are rarely short of stunning, whether it's an authentic twanging guitar or a horn ensemble providing the atmospheric accompaniment. And there's even a bizarre remixed version of SNK's ancient *Psycho Soldier* coin-op score in here, complete with the twee Japanese songstress's warblings that made it so inadvertantly amusing the first time around.

The graphics don't disappoint either. The backdrops rival the finest scenery in any fighting game, with particular attention paid to both depth of colour and level of detail. And the appearance of the old characters has been polished and tidied up considerably to ensure that they sit comfortably alongside the new characters on display.

So *The King Of Fighters* turns out to be yet another great Neo-Geo beat 'em up. It goes without saying that it is unlikely to convert weathered *SFII* fans to SNK's way of handling the genre, but those familiar with the territory will find that the game is home to some of the most satisfyingly fighting there is.



When knockout blows connect, the effect is wonderfully overplayed via a fullscreen flash

Edge rating: **Eight** out of **ten**







Old Neo-Geo hands will recognise these background characters (top). The 'Superstars of the Sports World' strut their stuff (middle and above)

Creature Shock

Format:	PC CD-ROM
Publisher:	Virgin
Developer:	Argonaut
Price:	£50
Size:	2 CDs
Release:	Out now (UK)











Top to bottom: Earth is overrun by aliens. Texture mapping is used in the shoot 'em up stages. Being eaten is a common occurrence



***Creature Shock's* action is either corridor-based (top) or takes the form of a shoot 'em up**

All of *Creature Shock*'s is pre-rendered. This is both its greatest strength and its primary weakness

Despite many efforts to bridge it, the yawning chasm between traditional, gameplay-oozing titles and Silicon Graphics-generated visual extravaganzas remains as wide as ever. The latest company attempting to exploit the virtues of both is Argonaut, space-game veteran and creator of Nintendo's Super FX chip.

Creature Shock excels in the pre-rendered arena – even an intro-sequence cynic would have a difficult time finding fault with the realistic character movements and plot development tactics used throughout. All the action is streamed off two CDs and alternates between 3D shoot 'em up sequences and moody corridor exploration. This pre-rendered gameplay style inevitably limits your freedom, but there's still a surprisingly high degree of self-determination.

Creature Shock's forte is its fear-inducing atmosphere. Creeping through dank corridors and tunnels, one minute safe and the next dragged off to a lair by some horrifically bulbous and malevolent spider, while rich music plays in the background, makes for an intense experience. And although a streamed game can never maintain the constant highs of an outing like *Doom*, the cut-scenes and variety of enemies leave you coming back for more even when you thought you wouldn't.

Despite this, the five levels of *Creature Shock* are ultimately linear, with periods of interaction and combat. The two shooting sections are pretty, but they only serve to delay the next stage for a while. They're never unfair, but their structure is disappointing – it's a question of plugging away at anything that moves until you reach the end boss, which takes a lot of patience to dispatch.

There are more annoying flaws in the game, such as no mouse-sensitivity control,





Your ship occasionally positions itself directly in your own line of fire (top). You have to repeatedly shoot this beast on its lower lip to kill it (above)

The organic appearance of the surroundings makes a refreshing change (top and above)

the absence of which results in frustrating and inexcusable misses with your laser. Also, like so many other exploration adventures, there are long periods of wandering through tunnels essentially doing nothing. More objects to pick up, more health bonuses (combat is tricky) and more guns would have made the game more rewarding.

The lack of automapping is another irritation. The main challenge in certain levels (particularly the alien ship) is locating the exit before you die of old age. In the 23rd century, as mankind explores distant stars, you'd think that the technology would be available to record where you stepped two minutes ago.

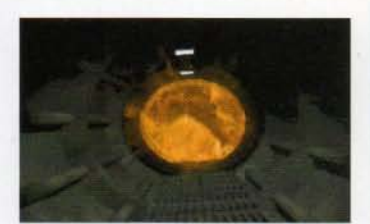
Corridor sections are the main part of *Creature Shock*'s attraction, but even these are by no means perfect. All the creatures you encounter (and there's a wide variety of them) have one weak spot that you have to hit to cause damage. Fair enough, but finding the spot in the first place saps half your energy, and attempting to aim the mouse accurately (and failing) takes most of the rest as the beast sways around. The real skill in this game is finding the right route and remembering how to kill the creatures you meet – you can't rely on simply blasting away like a maniac.

Creature Shock is yet another significant step along the road to a complete film/game experience. The atmosphere Argonaut has managed to generate is genuinely scary and the story flows beautifully from one scene to another. The music is exceptional and adds greatly to the game. However, there's still not enough interactivity buried beneath *Creature Shock*'s lavish padding to make it a real stormer.

Edge rating: **Six** out of **ten**



These critters need a well-aimed shot in the tail before they shuffle off this mortal coil





The intro sequence is one of the best yet. Discovery of a hostile living 'asteroid' leads to a core breach and the ship's destruction

Super Street Fighter II X

Format: 3DO
Publisher: Panasonic
Developer: Capcom
Price: £40
Release: Out now (UK)



The quality of 3DO *SSFIIX's* graphics is of a very high standard. All the characters, backgrounds, moves and frames of animation have been accurately translated to make a wonderful game

What is there to say about *Super Street Fighter II X*? This awkwardly titled game is the sixth instalment in Capcom's long-running licence to print money and, like all the previous *Street Fighter II* sequels, it seems to have pushed the concept as far as it will go. In the arcades, *SSFIIX* improved on *SSFII* by adding new moves and combos for every player and speeding up the pedestrian action. It was, of course, quite brilliant, and so is this 3DO conversion.

The game's publisher, Panasonic, took the plunge with 3DO last year and was rewarded with a lacklustre debut for the console in the US and a false start of a launch in Japan. With *Super Street Fighter II X: Grand Master Challenge* (*Super Street Fighter II Turbo* in the UK and USA), Panasonic finally has a game that can really sell the 3DO platform – a Capcom-developed conversion that surpasses all other *SFII* efforts.

Capcom hasn't exactly underachieved with its previous console conversions of *Street Fighter II* – the Mega Drive, Super Nintendo and PC Engine clones all played as well as arcade originals, even if they were graphically and sonically challenged. However, there are no shortcomings to 3DO *SSFIIX* – every aspect of the game is indistinguishable from its arcade parent.

All 16 characters in *SSFIIX*, including the original eight fighters, the four bosses and the four new challengers – Cammy, T.Hawk, Fei Long and DeeJay – are accurately translated. The proportions, ranges and all the frames of animation are faithfully reproduced and the graphics are as pin-sharp and colourful as the coin-op's. The gorgeous backgrounds are also beautifully detailed, from DeeJay's Caribbean beach party to Cammy's curious home (the Aurora Borealis in England?).

If any further proof was needed of the 3DO conversion's clout, Capcom has also included the original arcade machine's Attract mode, showing Ryu limbering up and launching a fireball. And, with a nod of inspiration towards



Even the old-timers look better in 3DO *SSFIIX*. Blanka's electricity reveals Cammy's fine bone structure

All-new *SFII*

Ken executes a Shadow move and lifts DeeJay off his feet (top and top left). Ryu finishes Zangief with a shadow move and the background explodes in a burst of light (middle). Fei Long has a flame kick which has the same effect as a Ken or Ryu fireball (bottom left). T.Hawk's new throw (main)

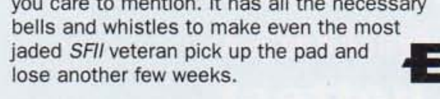
Mortal Kombat's Reptile, the mysterious Akuma character is present. You can only access him via deft fumbling on the fighter selection screen, but it's worth it, because he's one of the strongest characters in the game (even though he looks like Al Jolson's impersonation of Ryu in tatty pyjamas).

Of course, the secret behind *Street Fighter II's* success isn't just fancy graphics but also the thumb-punishing gameplay, and Capcom hasn't compromised this aspect one bit. There's the possibility of three, four and even five-hit combos for all the characters, and points rewards for executing them.

The new 'rage gauge' power bar is also featured. When a hit connects, whether it's blocked or not, the power level on the bar builds up, and when it reaches maximum you can execute your character's special Shadow move. Usually, this involves repeating the joypad move for a 'normal' special move two or three times and pressing a button – it's not simple, but you're rewarded with a wonderfully animated Shadow move and a giant flash of light. And it really hurts your opponents, too.

It's very hard to fault 3DO *SSFIIX*, and any criticism is mere nitpicking. The lack of parallax scrolling in the far reaches of the background and the intrusive CD access time (several seconds per fight, more than Crystal Dynamic's 3DO *Samurai Shodown*) hardly ruin the game, and although control is difficult with a standard 3DO pad (you have to use the top two buttons and the stop button to get the required six), if you use one of the many six-button pads or sticks available you'll have no problems.

There's no doubt that 3DO *SSFIIX* eclipses all previous beat 'em ups on whatever format you care to mention. It has all the necessary bells and whistles to make even the most jaded *SFII* veteran pick up the pad and lose another few weeks.



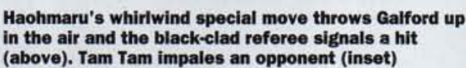
Edge rating: **Eight** out of **ten**



If you can't manage the nimble fingering required to summon Akuma, just give Ryu one of those exploding Acme cigarettes that Daffy Duck smokes, and wait...

Samurai Shodown




Haohmaru's whirlwind special move throws Galford up in the air and the black-clad referee signals a hit (above). Tam Tam impales an opponent (inset)


The character animation in 3DO *Samurai Shodown* is stunning – just like it was in the original




Ippon! Another win for Kabuki star Kyoshiro (top). French heroine Charlotte duels with Ukyo (above)

Format:	3DO
Publisher:	BMG
Developer:	Crystal Dynamics
Price:	£50
Release :	Out now

It's rather unfortunate for the Neo-Geo CD that just as the machine is launched in the UK, a conversion of the most desirable Neo-Geo title of them all arrives on the 3DO. *Samurai Shodown* first appeared on the Neo-Geo just over a year ago and made every other beat 'em up look as sophisticated as *Way Of The Exploding Fist*. Huge characters, outlandish special moves, great sound and beautiful graphics won SNK's arcade console many new fans.

Samurai Shodown also won over that champion of the 3DO, Crystal Dynamics, which insisted on doing the conversion for Trip Hawkins' fledgling format. After a series of slick but flawed 3DO originals, including *Total Eclipse, Crash 'n' Burn* and *Off-World Interceptor,* the crew at the Palo Alto-based company obviously relished the task of converting one of its favourite games.

Like many great arcade titles, it's the cosmetics of *Samurai Shodown* that first grab you. The detailed graphics feature the same 'zoom' effect pioneered by SNK in *Art Of Fighting*, changing from a closeup when the fighters are together to a wider view of the arena as they move apart.

And the fighters themselves look fantastic – more impressive than any other sprite-based beat 'em up. Crystal Dynamics has included all the fighters of the 118Mbit original, from the gigantic, farting Earthquake to the Chinese warlord, Wan Fu. More importantly, the finely balanced gameplay has also been faithfully captured. The characters are easy to control (although special moves are awkward with the 3DO's clunky pad) and the swordplay is a welcome alternative to the fisticuffs of *Street Fighter II* and *Mortal Kombat II.*

Those fans of the Neo-Geo version with a tendency to nitpick would probably only find fault with the game's frame rate. Unlike Capcom's immaculate 3DO conversion of *SSFIIX*, 3DO *Samurai Shodown* runs at around half the frame rate of the original.

But despite this, *Samurai Shodown* hits the mark. It's encouraging to see that the 3DO has now become a machine for beat 'em up connoisseurs. E

Edge rating: **Seven** out of **ten**


Galford's dockside location is like a giant version of Ryu's jetty in *Street Fighter II*

Like a good wine, many vintage videogames mature with age. Mike Singleton's classic adventure is one title that has stood the test of time

Lords Of Midnight







The graphics may look fairly basic by today's standards, but in 1985 they were more than adequate

Format:	Spectrum
Publisher:	Beyond
Developer:	Mike Singleton
Players:	One
Price:	£10
Released:	1985

Edge invites contributions to Retroview. Entries must be in Edge style and approximately 250 words long. Published contributions will win a year's subscription to the magazine. Address: Retroview, Edge, 30 Monmouth Street, Bath BA1 2BW. Fax: 0225 338236. E-mail: edge@futurenet.co.uk.

Lords Of Midnight burst upon the Spectrum scene in 1985. With the market dominated by platformers, shoot 'em ups and text adventures, it marked a significant departure for the machine.

Here was a vast and compelling world populated by a variety of foes and allies, both human and inhuman. There were options to play a solo quest or engage in a massive battle simulation with total control of numerous armies. *Lords of Midnight* delivered so much more than a few good ideas in a single package; it was the first total gaming experience for Spectrum owners.

The cornerstone of the gameplay was a quest to retrieve an artefact and save a civilisation – a concept that has since formed the basis for many other games. But the wargame option was equally responsible for the game's success. It offered a brilliant blend of tense strategy and action, with the freedom to recruit, march, camp, attack, defend citadels or launch suicidal diversionary assaults on the forces of darkness.

The manual, a mini novel designed to set the scene, has also had countless imitators over the years, but few have been written to the same standard as *Lords of Midnight*'s.

Every adventure gamer today owes programmer Mark Singleton a debt of gratitude. If only all games were remembered so fondly.

This month's Retroview was supplied by ***John Tapper****.*





The game's depth ensured a lengthy quest. The current inhabitants of each area appear at the bottom of the screen (above)



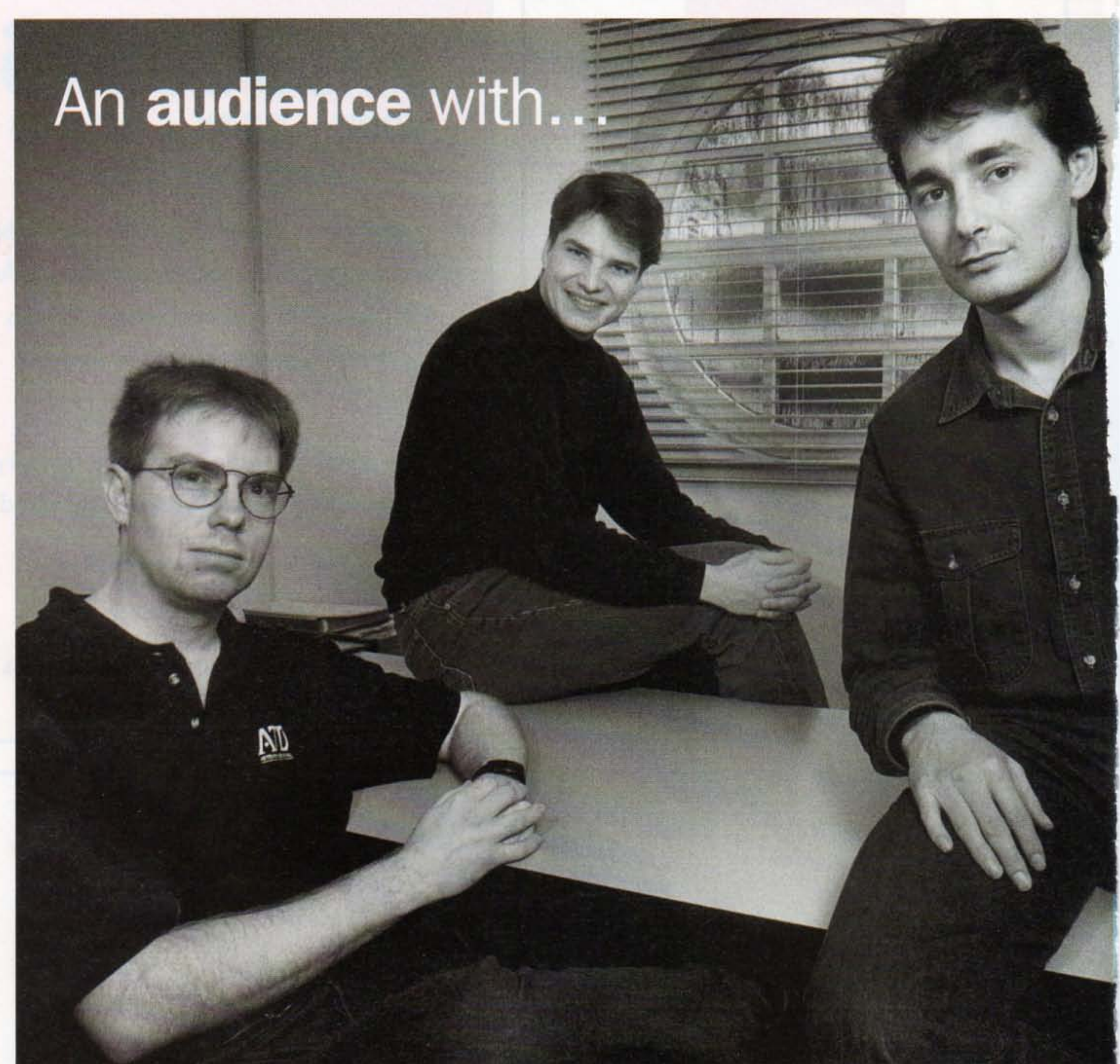
The third game in the *Lords Of Midnight* series has now been put back until mid-February





Remarkably detailed descriptions (considering there was only around 48K to cram the entire gameworld into) accompanied every locations. You could search each area, too

An **audience** with...



Left to right: **Jim Torgussen, Martin Green, Chris Gibbs**

ATD

How did a virtually unknown British outfit become the first developer for the Atari Jaguar? **Edge** quizzes the creators of *Cybermorph*



Photographs: Jude Edginton

'The last year is notable for its unoriginality. If there is one area of originality, it's in network games. That is where original genres will appear. Games played on a network are the most fun'

Attention To Detail started creating computer games seven years ago, just after its four founders, Martin Green, Chris Gibbs, Fred Gill, and Jim Torgussen, graduated from Birmingham University. In their final year the quartet did the superlative Atari ST conversion of the *Super Sprint* arcade machine for Electric Dreams. With a little help from contacts they made during that time, they set up ATD. 'Attention To Detail' was more than just a name; it was a statement of intent.

From the beginning, the emphasis was on technically innovative products. The company has now matured to the stage where it produces both hardware and software for games, arcade machines and business applications. Unfortunately, the first major project to which the team applied its talents was the ill-fated Konix Multisystem. Despite this setback, ATD, although not as high profile as some developers, is involved at the sharp end of games software and hardware, producing arcade machines for Bell Fruit and now games for the Atari Jaguar.

Based in a business centre built on the ruins of an old stable block in the open fields of Warwickshire, Attention To Detail now employs 21 people, a number which is expected to rise to 30-40 by the beginning of next year, and has just bought another 1000 square feet of space in the building. The company is evidently readying itself for the next generation.

Edge How on Earth did you bounce back from the Konix debacle?

Chris Gibbs That was actually a really good time for us. We were new to the industry, but because we got involved writing the system software, the first game for it and some software tools, we met a lot of developers and made a great number of contacts in a short space of time.

Martin Green In particular we met the people at Flare, and they involved us in a lot of things that they were doing. They introduced us to Bell Fruit, for example.

Edge How is the company's workload distributed between the four of you?

Chris There's a fundamental split, first of all, in that Fred and I do all the games side, while Martin and Jim do all the technical side, which involves the electronics and the *Windows* stuff.

Edge How do you evolve a game design?

Fred Gill All employees are encouraged to submit game designs, which are reviewed by us, and we take it from there. If it's a good design, we'll take it further with the people involved. We've got two or three in at the moment. Chris and I are usually involved in steering those forward.

Martin We've had a number of design sessions as well...

Chris Our Pizza Evenings [laughs]. That's really how we work. The new 32bit stuff is original concepts we came up with in brainstorming sessions. We've just taken a scriptwriter on board this month, because we've got so many ideas kicking around, and the way they're written up and presented needs to be as good as possible, even putting videos together for those that require it.

Martin Publishers are demanding – increasingly because the projects are getting bigger – a higher and higher quality of submission material on design.

Edge You can't just send them a bit of paper any more...

Chris That's right. Not that we ever did send them on the back of envelopes.

Edge What do you think is the likelihood of someone coming up with a good game design on their own these days?

Fred I think that still happens, but it's whether or not they can bring it to market. That's the big shame. You tend to find it's teams of people, not one person any more. PCs are the one place where one person could do that. You can't do it on the Sony, you can't do it on the Saturn.

Martin The other angle on that is, how are people going to get trained? One of the thing we look for when hiring people is a hobbyist background. That's more important, as the enthusiasm for the job is critical. People only get that by having access to computers. The Sinclair Spectrum, for example, gave us an entire generation of programmers.

Edge In the absence of cheap home computers, where are the coders of the future going to come from?

Martin There are more and more people who will have a PC at home. The PC is replacing the traditional home computer in that sense. But maybe the answer is to do a keyboard add-on to the PlayStation, and a hackers' cartridge.

Chris The people that we take on are graduates, although they might not be experienced in game programming, if they're into games as a hobby, then you can turn their skills to that. We haven't got so much of a focus any more on the low-level technical hacking, which is what the Spectrum encouraged. We're looking now at machines where you've already got the power given to you on a plate, and that's like a high-level approach where you don't need to have programmed a game to cope with it. You do need to have this 'what makes a game play well' feeling.

Continued next page

interview



Continued

Fred It's going to be harder and harder to get your foot in the door, though. We were just talking about producing videos... you can't just produce a paper design, so how does the person on the street do it?

Edge So how did *Cybermorph* and, later, *Battlemorph* come about?

Fred It was Flare Technology. They rang us, it must have been three years ago, saying they'd developed this new chip that they wanted somebody to test. They'd done the silicon, and they needed someone to test the functionality. Then it became apparent that it was the Atari Jaguar.

Chris At that stage nobody had heard of the Jaguar – it wasn't even a rumour.

Fred So we gave them some help debugging the chipset, and some suggestions for instructions that could go into it. Then, since we had that experience, it seemed silly not to be doing a product.

Chris They asked us to do some demo software, to show off the chipset, but that soon turned into a requirement to turn it into a game and we put a full proposal together. The brief was to produce something that was very simple, something you could pick up and you knew what you had to do straight away. And that's what we did.

Edge And so presumably Atari said, 'What about a sequel?'

Chris Well, as always, you come up with a lot of ideas that can't be exploited in the time allowed. Also, as it was the first game produced on the machine, there was a lot of things we found out about the machine that we could exploit again. So we put all that together and we did end up with a solid basis for a sequel, which is now called *Battlemorph*. The big change in *Battlemorph* is that you can now fly underground, you can go under the sea, and you can go through tunnels. It's also a CD product, and people don't like sitting there watching loads of sequences when they really want to be playing the game. So this game doesn't actually rely on the CD at all while you're ingame. It doesn't do anything to slow you down.

Edge Do you think that the technology to produce good interactive CD games is still not really there yet?

Fred I don't think it's far off. Quad speed would be good, double speed is fine, but the industry just hasn't got around to designing CD games that people want. I think people's perception is that on a CD they're going to get lots of graphics.

Edge And, of course, they feel let down if they don't...

Chris We've got nothing against CD-ROM at all, but you can't make it improve the quality of a shoot 'em up.

Edge What was Atari like to work for?

Chris We've been very happy working for Atari. People make decisions about Atari based on what they see from the outside, but we've been working closely with them, at all levels, and they've given us an awful lot of support. When you say, 'what is it like working for the company?', we translate that into various individuals within the company.

Martin In the past, with other companies we've dealt with, the approach has been when you get to the end of the product, 'Let's have it.' The one thing Atari have been very good at is saying, 'We want the best product.'

Edge What, in your opinion, is the most

'The trouble with the 3DO is that it's going to suffer from PC-itis. They've got the base machine, but they're already talking about the next generation. So which one are you developing for?'









original game released over the past year?

Chris I think it's fair to say that there hasn't been a lot of original stuff in this last year. I think the last year is notable for its unoriginality. If there is one area of originality, it's in network games. Games played on a network are the most fun. That, I think, is the area where original game genres will appear. In fact, the next electronics project we're working on is about network games. I can't really say more about that at the moment.

Edge How would you like to improve the software industry?

Fred One common platform would be useful. It's a pain to develop for four platforms at once. It would help you concentrate on product rather than technical difficulties.

Martin If you could get to a point, and it might happen within three or four years, where you could program at a level which was somehow slightly abstracted from the hardware. Then you could have your polygon models, and you'd model them at some high resolution, and it would display them at lower resolutions depending on how good the machine was.

Fred I think the thing that 3DO tried to do was quite interesting, trying to get one machine accepted by several people. The trouble is that it's going to suffer from PC-itis, as it were. They've got the base machine, which is good, but they're already talking about the next generation. So which one are your developing your software for?

Edge So the machine has to be downwardly compatible, at least in theory?

Fred That's the problem: somebody's going to have the base-level machine. They can't afford to upgrade but they still want the latest software. The new machines are interesting, though, because of coding in C. C helps a little bit in unifying them. It's a third of the speed of hard-coded assembler, but it's portable.

Edge Is virtual reality a dead end?

Martin No. But I get motion sickness on *Doom*, so…

Fred I haven't played any VR for a year or so now, but it was crap then.

Chris I've played VR games two or three times, and I've thought, I could really get into this… if it looked good.

Martin I think the main problem is technology. And I have my doubts about the social aspect of it. It could get messy. It could get disturbing.

Edge Is doing hardware more risky than producing software?

Chris A hardware component has a functionality of x, y and z, and it's known that is going to be wanted in the market. As long as your design is sound. With a game there's a lot more risk, because you don't know if it's going to play well. With a piece of hardware you know what it's supposed to be doing.

Fred But that said, it's generally easier to tweak software than hardware.

Martin The reason we've been able to get into hardware at all is because we're using a type of chip that is self-programmable. So we don't go the full ASIC route. And what we've done is a process of downloading it into a chip, testing it and it works.

Edge Are arcade machines slipping because of the new consoles?

Martin It's true to say that this new generation of games machines is the first generation of 'hardware designed' games machines. Everything else before that has been really pretty simplistic. The skills you see in the design of processors are an order of magnitude greater in complexity than the skills you see in the design of these arcade machines.

Edge Older consoles were just a processor and a bit of I/O stuff…

Martin Yes. The investment in hardware was minimal. Now they're finally having to figure out what it takes to write a game.

Edge When the company gets so large that it doesn't need you to run it any more, what would you like to do?

Jim Torgussen I've always wanted to direct films, but I don't know if I would actually do it.

Chris Personally, I'd like to create a comic book. I'd like to take a year out and go to an island somewhere and create characters all day.

Fred I think I'd probably write novels. I'd still have to be involved in something creative. It would take me forever, though.

Martin If there were capital around I'd like to do some sort of leading-edge research. But there are so many people doing the same thing that trying to find an area of any originality would be difficult. EDGE

questiontime



Send your **questions** to Q&A, **Edge**, 30 Monmouth Street, Bath, Avon BA1 2BW

Q I am an avid reader of your magazine and I enjoyed your article on computer game music, but I am confused about the soundchip in the SNES. You said that the only drawback of the chip is the amount of memory the SNES has for sound emulation. Yet other magazines and Nintendo's own technical specifications state that the SNES has 512K for sound RAM. Please clear up this misunderstanding for me.

Stephen Erlebach, West Molesey

A The SNES definitely has just 64K of RAM. Maybe you're getting confused between bits and bytes: 64K (kilobytes) is indeed 512 kilobits (one byte equals eight bits). The SNES's lack of memory causes problems for programmers, but the machine's sound capabilities are otherwise superb (despite the fact that it only has eight channels). Incidentally, both the Saturn and PlayStation have 512K (kilobytes) of sound RAM.

Q **1.** Does the 32X improve the Mega CD's FMV capabilities? If so, what kind of improvement could we expect? Would the sound also be improved?
2. Do the Saturn and the PlayStation come FMV-equipped? If not, can some kind of FMV add-on cartridge be expected?

Ade Simpson, Lincoln

A **1.** Yes, the 32X allows partial-motion video in 256 colours, although the single-speed drive in the Mega CD still limits its potential. As far as sound goes, the 32X uses 8bit stereo PWM at 44KHz but the system can also use one of its CPUs – an SH-2 – for producing effects like QSound. The 32X can also handle DMA in a similar fashion to the Amiga, and Mega Drive sound can even be mixed with 32X sound.
2. The video capabilities of the Saturn and PlayStation are largely unproven. Games like *Clockwork Knight* on the Saturn have some beautifully rendered scenes but they're spoilt by poor playback quality. MPEG expandability is scheduled to be available for both machines, though.



Will the 32X give Mega CD games (*Ground Zero Texas*, above) better video? (See Ade Simpson's letter)

Q **1.** When will the ARM 700 chips replace the ARM 610 as the standard CPU for the RISC PC?
2. Will Acorn be replacing the cheaper A4000 with an ARM6/7-based machine in the foreseeable future?
3. I've read that the RISC PC can now have up to five ARMs fitted at one time. Does this mean that five co-processors can also be fitted – for example, Pentium, Power Mac and MPEG all available simultaneously?

Paul Biggs, Derby

A **1. & 2.** Acorn hasn't yet decided exactly when the ARM 600 range will be superseded by the new chips. The ARM 700 will include an 8K cache (twice the 600's) and a better write buffer, plus clock speeds of up to 40MHz.
3. You can only add extra ARM processors – and to do that you'll need to buy an add-on interface from a thirdparty company called Simtec.

Q **1.** Is there any good software for rendering and animating 3D images, like *3D Studio*, at an affordable price (under £250)?
2. After reading your article on the 3Dlabs GLINT chip in **Edge** 15, I would like to know when it will be available for home computers, how much it will cost, and if there will be any versions bundled with a decent 3D program.
3. Finally, will there be any games like *Ridge Racer* or Sega's *Virtua* range available for PCs which have the same chip?

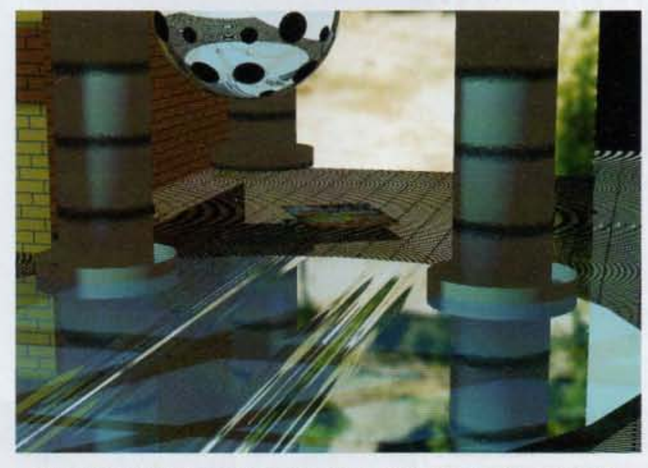
N White, Doncaster

A **1.** Some of the most affordable rendering software is available for the Amiga. *Imagine 3.0*, for example, can be picked up for under £100, and runs on A1200s equipped with 3Mb of RAM, while *Lightwave* costs around £500. There are also many useful PD (public domain) rendering programs around. They're not as sophisticated as *3D Studio*, of course, but they're cheaper.
2. The GLINT chip is now finished and is being incorporated into PC cards by various manufacturers, including 3Dlabs. Expect to see the first GLINT-powered graphics cards by about February.
3. Quite possibly. 3Dlabs has licensed a version of the chip, the 300TX, to a major arcade company and conversions could follow. As for *Ridge Racer*, Namco is starting work on a standard PC version for release in late '95.

Q **1.** This may sound stupid, but what exactly is 'rendering'?
2. Which CD-ROM drive under £150 do you recommend I get?
3. Have you heard anything about a new 'super' games console from Apple called the 'Pippin' (working title)?
4. Will Ultra 64 carts cost more than current SNES games?

Reuben Easey, Worthing

A **1.** Rendering is the term used for the process of calculating and drawing a 3D image. Whether it's a frame for a prestored animation – as part of a game intro, for example – or simply a frame from a realtime 3D game like *Daytona USA*, it's called rendering. Rendering doesn't take place when graphics are streamed off CD, though, as seen in *Microcosm*. In this case the



This image was rendered using *Imagine 3.0* for the Amiga, one of the many budget rendering packages available (see letter from N White)

graphics can be described as pre-rendered because the rendering took place previously – the graphics are simply played as video directly off the CD.
2. Just make sure you get a double-speed drive with an access time of less than 300ms.
3. Pippin is the result of a collaboration between Apple and Japanese giant Bandai. A CD games/multimedia console based on the 64bit PowerPC chip, it will go on sale in Japan in mid-'95 for an estimated ¥60,000 (£385). US and European launches will follow. Given Apple's hardware pedigree and the clout of its Japanese partners, Pippin has great potential.



When will the new ARM 700 processors replace the ARM 610 series of chips in Acorn's RISC PC? (See letter from Paul Biggs)

Q I, like many people, am thinking of buying an imported PlayStation when it becomes available in Japan. However, I think there may be a couple of problems. When Sony's machine eventually reaches these shores, will I be able to play the games when they are available? Or is Sony going to impose a tight regime whereby consoles purchased in one territory cannot use games bought in another part of the world? After all, an RPG like *Labyrinth* would be unplayable if it features reams of Japanese text. What exactly is Sony's policy going to be?

Michael Hosty, Runcorn

A Unfortunately, things aren't crystal clear on this point yet. However, one insider at Sony Computer Entertainment in Japan assured **Edge** that there might be cross-compatibility between PlayStations in different countries. However, given the perennial 50/60Hz problem between PAL (UK) and NTSC (US and Japan) formats, don't hold your breath. If the UK machine arrives with a bordered 50Hz display, then the import market will remain healthy. And no doubt importers will eventually solve the problem of running import games on the UK machine with a screwdriver and a bit of knowhow.

Q **1.** I have a Sony TV with a SCART socket and a standard aerial jack. Will I be able to plug the PlayStation straight into this or will I need an adaptor or even a new TV?
2. If the answer is no, what will I need to use the console?
3. How much will the PlayStation cost (roughly) on import, and how would I go about finding a 'safe' dealer?
4. When the PlayStation is released in this country, will it be identical to the imported version, eg compatibility of software and the twoplayer lead?
5. Will I need to be able to be fluent in Japanese to understand the text in games manuals? I would like to be able to read the manuals supplied with games to see if I've set games up properly.
6. If the machine breaks, will I be under guarantee?
7. How much would imported software cost for the PlayStation?
8. Can you think of any other problems I might face when and if I get a PlayStation?

William Barnard, Somerset

A **1. & 2.** In most cases, you'll be able to run the PlayStation only if you get the SCART lead for it – there's one due from Sony, but it's not available at the time of writing (see news). Of course, if you have a recent Sony model, it's also possible that you'll be able to run the PlayStation through composite AV or (for a better picture) S-Video – many mid- to upper-range Sony TVs are compatible with both PAL and NTSC formats.
3. Anything from £500-£1000. If stocks in Japan are immediately consumed, it's possible that the number of units making their way to the UK could dry up until Sony ship again. If this happens, then those who paid through the nose in the first few weeks will have machines worth their weight in gold. There's no sure way of avoiding getting ripped off. Most of the complaints levelled at import companies arise when money is taken for machines that haven't arrived in the country. Don't hand over any cash unless you're certain that the machines are in stock, and if possible, travel to the shop/mail order company and collect the goods in person.
4. It's unlikely (see letter from Michael Hosty).
5. Most games that make it to the UK on import will be playable in their Japanese form. *Ridge Racer*, *Parodius* and *Motor Toon Grand Prix* all feature English text throughout.
6. Most importers will supply some form of guarantee.
7. Software for the PlayStation is comparatively cheap, but the yen is currently very strong (¥155=£1), which makes it more expensive. With import duty taking its toll as well, don't expect to get hold of software for much under £50.
8. You'll need a step-down transformer – the Japanese PlayStation runs off a 110V AC supply. You should be able to pick one up at a high-street electrical store for £20-30.

Q **1.** What speed (in MHz) do the PlayStation and Saturn run at?
2. I've read an article in an American magazine that *Killer Instinct* will be a Midway release. If so, will there be a version of *Killer Instinct* (which seems to be an Ultra 64 title) for the PlayStation, since Midway is the third PlayStation coin-op hardware licensee?
3. How many companies have signed licence agreements with SCE for the PlayStation?
4. Will there be a Saturn version of *Ridge Racer*, since Namco is making games for the Saturn too? And will games converted from the PlayStation to the Saturn, or vice versa, be of the same quality as the original?
5. Why is the Ultra 64 not getting as much attention as the PlayStation and Saturn?

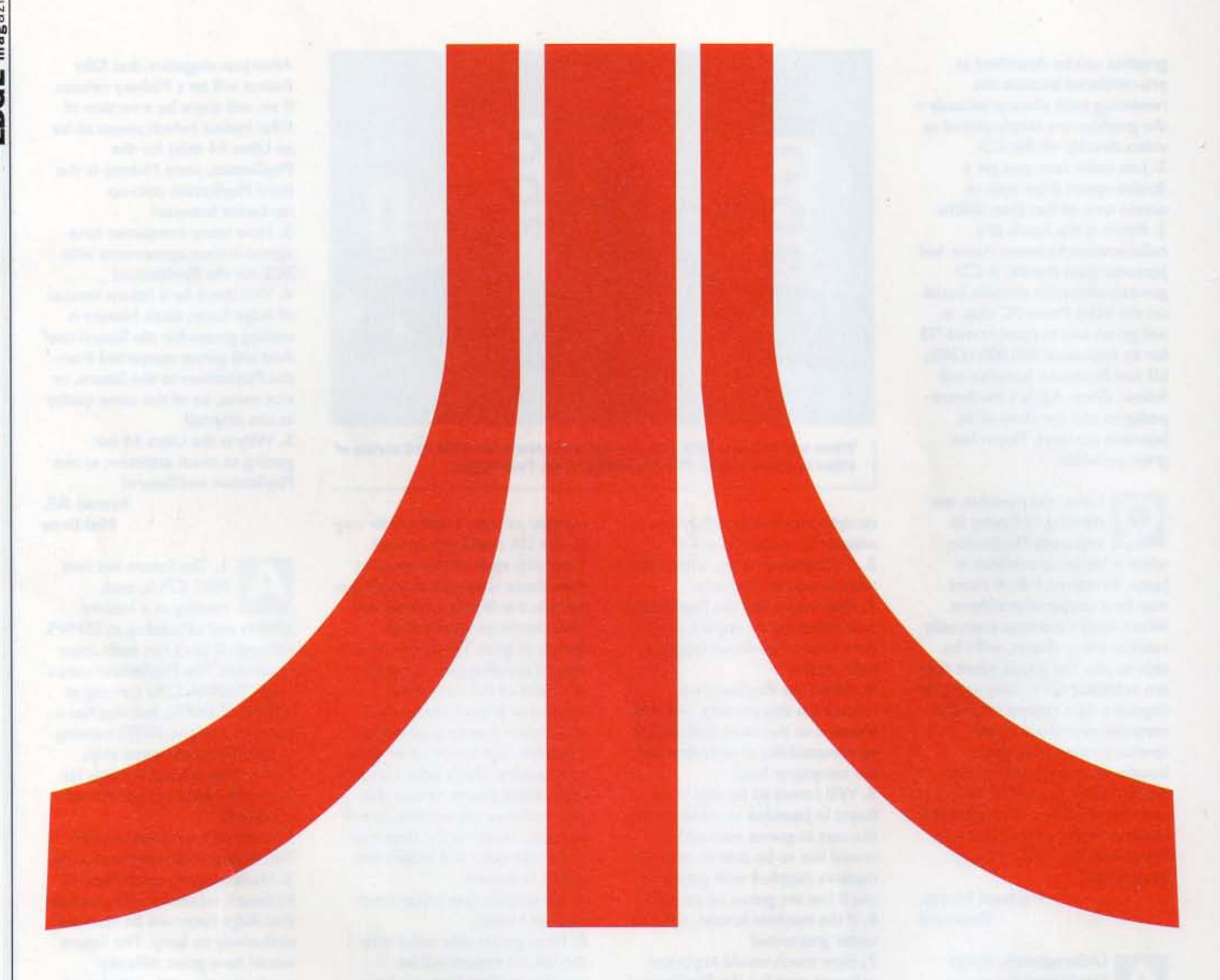
Imran Ali, Maldives

A **1.** The Saturn has two RISC CPUs, each running at a healthy 27MHz and calculating at 25MIPS, although it can't run both chips in parallel. The PlayStation uses a single R3000A CPU running at 33MHz (30MIPS), but also has a geometry engine (GTE) running at 66MIPS on the same chip.
2. No, *Killer Instinct* is solely for Nintendo. Sony will get *Mortal Kombat III*.
3. Over 250 worldwide, with 700 development systems in use.
4. Namco hasn't committed to its Saturn schedule – it's possible that *Ridge Racer* will be licensed exclusively to Sony. The Saturn would have great difficulty producing as good a version of the game as the PlayStation.
5. Simply because Nintendo is not releasing information about the system and the hardware is a long way off. Nintendo's system is likely to be superb, although in the aftermath of Virtual Boy anything is possible. **E**


Q and A

You can rely on Edge to cut through the technobabble and give you straight answers. Write to: Q&A, Edge magazine, 30 Monmouth Street, Bath, Avon BA1 2BW. Alternatively, fax us on 0225 338236, or e-mail us at edge@futurenet.co.uk.

Edge regrets that it can't answer questions personally, either by phone or by post.



Atari has attracted scathing criticism in recent months – not least from **Edge** – over its apparent inability to exploit the Jaguar's potential. Charges of incompetence and rumours of impoverishment have done little to engender confidence in the company's future.

But this isn't just another insignificant, fly-by-night outfit we're talking about here. This is a company that actually *created* the videogames industry and, after 20 years, is still in the game.

In issue 18 **Edge** charts the rise and fall of the legend that is **Atari**, and reveals that not only is news of its demise greatly exaggerated but that it could be about to turn the entire games community upside-down.

Issue eighteen

Thursday 26 January





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